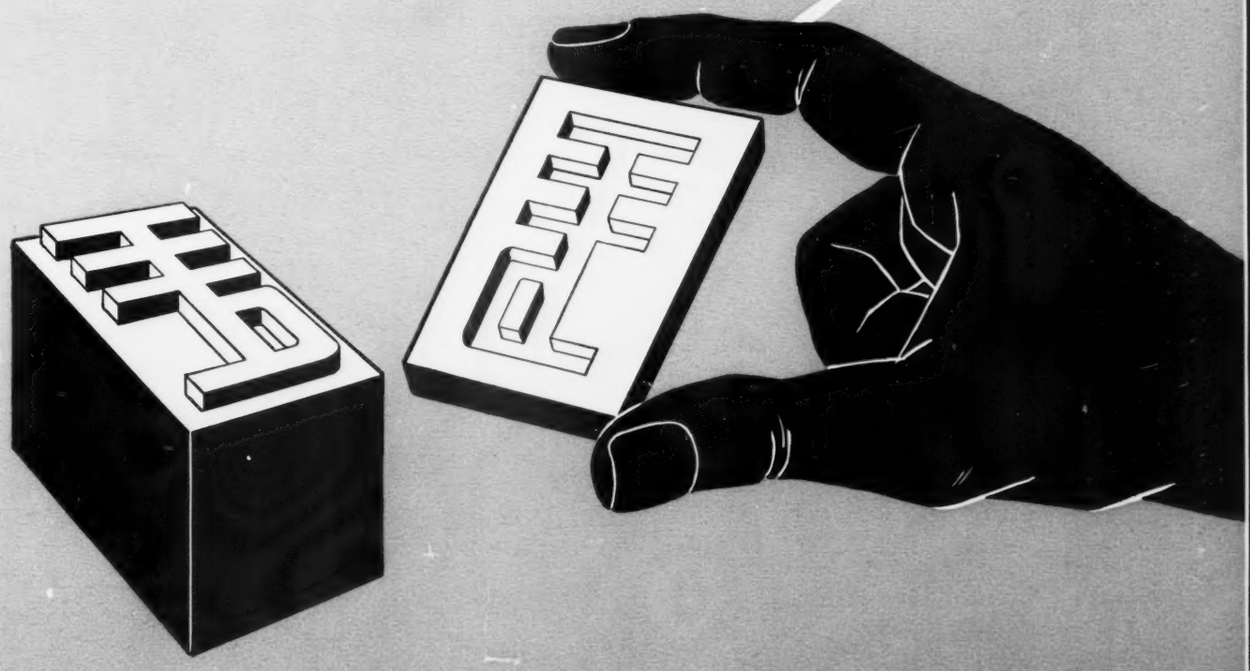
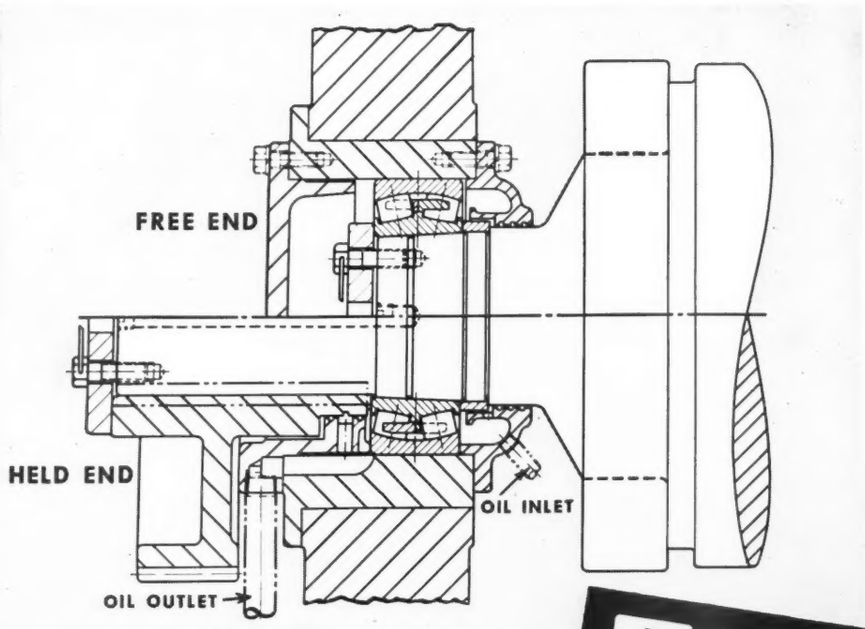
SEPTEMBER 1951

| PLEASE ROUTE THIS COPY TO | |
|---|---|
| Manager | Pressroom Foreman |
| Production Mgr. | Bindery Foreman |
| Plant Supt. | Mailing Foreman |
| Platemaking Foreman | Maintenance Supt. |
| Composing Foreman | Purchasing Agt. |
| For filing, please return to | |

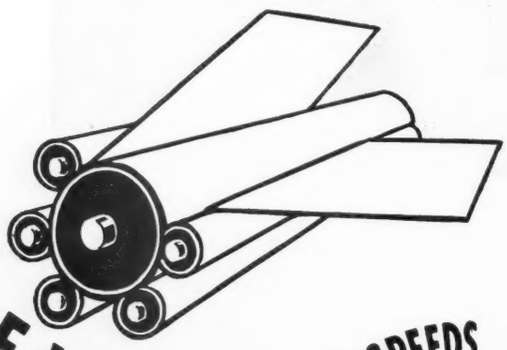
# PRINTING EQUIPMENT *Engineer*



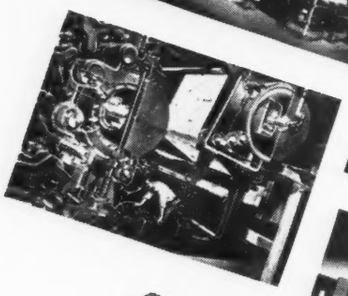
AN INDUSTRY-WIDE TECHNICAL PUBLICATION



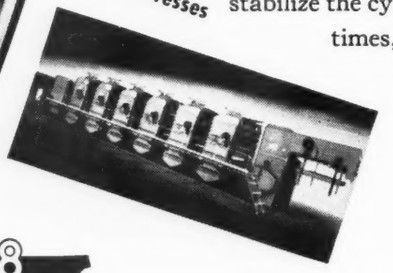

SKF
BALL AND ROLLER BEARINGS

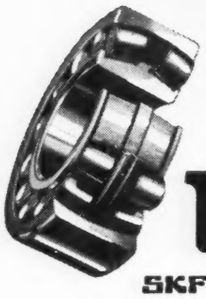


# FINE WORK at HIGH SPEEDS with SKF self-aligning printing cylinder bearings



SKF Printing Cylinder Bearing Equipped Presses





The SKF Self-Aligning Printing Cylinder Bearing answers the printing press builder's specifications for a bearing with a "large bore and relatively small outside diameter." SKF engineering features of bearing and mounting have resulted in its wide acceptance on black and color units; magazine presses; metal and paper offset presses, both sheet and web fed; gravure presses. Preload is uniform, eliminating any need for adjustment if replacement is ever necessary. Precision tolerances are applied to all important dimensions. Removal is easy, thanks to SKF's system of hydraulic removal. Simplified design does away with the need for an additional bearing to stabilize the cylinders or take gear thrust. Operation is cool at all times, eliminating undue expansion in the eccentric boxes. These advantages are proof again that SKF engineering helps all industry to put the right bearing in the right place.

7263

8 REASONS WHY SKF IS PREFERRED BY ALL INDUSTRY

integrity • craftsmanship • metallurgy
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product uniformity • engineering service
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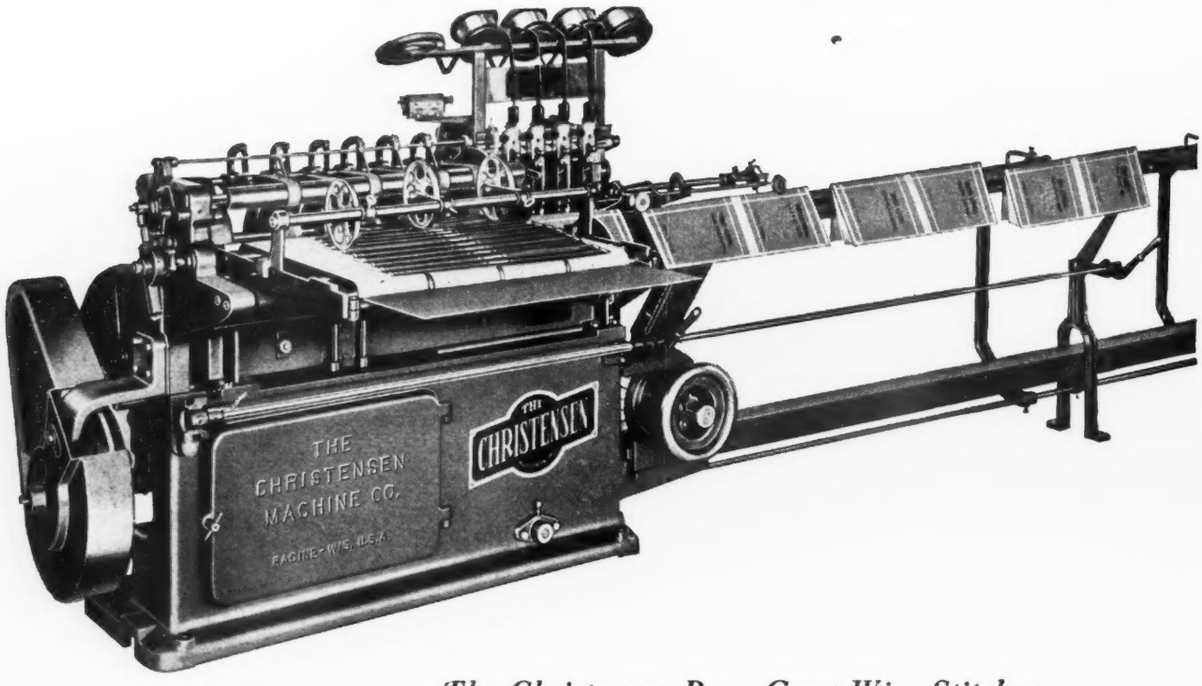
## Even in the *Smallest Binderies*

### this well-known Pony Gang Stitcher is used!




*The Christensen Pony Gang Wire Stitcher*

It's just as important here as it is in the larger plants to have the stitching match the output of the high speed folders.

The Christensen Pony Gang Stitcher gathers and stitches at a single operation as fast as one or more girls can feed it, thus overcoming the costly bottleneck in the binding process.

It handles signatures from 2½ x 5" up to 12 x27"; has an operating speed of up to 9,000 an hour; is accurate, economical, practically noiseless and delivers the product neatly stacked.

*Single signature booklets* may have signatures placed on the moving conveyor by one girl. Or two girls dropping signatures on *every other* feeding station may be used to secure maximum production.

For *multiple signature booklets* one girl for each signature is placed at each station. Signatures are gathered until book is complete, after which it is stitched and delivered automatically.

Without obligating you in any way, our representative will be glad to explain the all-around economies you may expect from the Christensen Pony Gang Wire Stitcher in *your* plant. Write us today.

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***Modern Machines for Printers and Binders***

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**AMERICA'S LEADING NEWSPAPERS ARE PRINTED ON GOSS PRESSES**

*in the Canton*

*4 star test market*...*

*it's the—*

**CANTON REPOSITORY**

*CANTON, OHIO — 4 STAR TEST MARKET

- ★ Complete Coverage by One Newspaper
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The Canton Repository — with a 100% coverage of Canton homes (99.3% carrier delivered) —is printed on Goss presses. The latest installation consists of seven Headliner units . . . one pair of Uni-Flow folders . . . and one color deck. This equipment provides all the latest Goss features — full range color flexibility . . . Tension Plate Lock-up . . . continuous ink feed system . . . fingertip Colortrol . . . fully enclosed automatic lubrication . . . preloaded cylinder and form roller bearings . . . enclosed oil-tight folding motion . . . and streamlined styling.

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*it's* **GOSS** *again*

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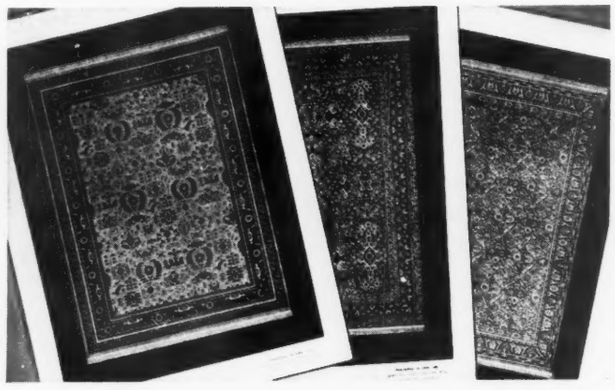
### *NEW EVERYDAY CATALOG OFFERS COMPLETE COLOR, HALFTONE INK SERVICE*

"Don't buy inks just any way—buy them the modern Everyday way." If you have not yet taken this Everyday ink advice, here's a chance to start. There's a new IPI Everyday Packaged Inks catalog just off the press. We will be glad to send a copy which tells about the advantages of this outstanding line of inks. Easy to order, ready to use, uniform, precision controlled, 25 popular colors, blacks, process colors, bond inks, whites, compounds. Gives you a complete color and halftone printing ink service. Write on your letterhead to IPI, 67 W. 44th St., N. Y. 18, N. Y. IPI Everyday inks were developed for Miehle Verticals and Horizontals, Kellys, Miller Simplexes, Kluges, cylinder presses and similar type presses. You can buy them singly in 1 lb. and 5 lb. cans. You'll find them ideally formulated for practically all of your work—especially on automatic presses. Many printers rely on the Everyday line for their entire printing ink needs.

# SKEPTICAL CUSTOMER TESTS GEMTONE CLAIMS PRODUCES BEAUTIFUL WHITTALL RUG CATALOG



### *Inks Blend After Six Weeks Like Old Inks on Following Day—Add Life and Lustre*

We have made a lot of claims for IPI Gemtone inks. Here's a letter from one of our customers which proves that we were not exaggerating. Mr. G. A. Bourdelais, Printing Dept. of M. J. Whittall Associates, Inc., makers of high grade rugs and carpets, wrote to our Cambridge branch as follows:

"When your salesman first called on me explaining what your Gemtone inks would do, not only in four-color process work but on any color work that has to have an overprint, I was frankly skeptical."

"I have since found out, however, that his claims were not exaggerated and our color work here has not only been made easier but the quality has actually improved.

"Before using your inks, all of our process work had to be followed up day by day in superimposing colors to get proper drying and blending. By using Gemtone, however, a delay of two weeks or a month seems to make no difference. I have found that Gemtone inks blend as well in six weeks as the old ones did on the following day, and to top it all, the finished product has an added life and lustre.

"Thank you for your conscientious and successful efforts to make work easier for the trade."

Thank you, Mr. Bourdelais. We rest our case. If *you* have not yet tried Gemtone process inks we think you have a pleasant and profitable experience coming to you.

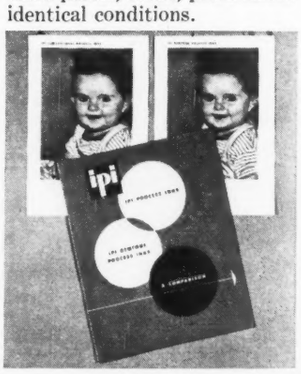
If you would like to see a sample of the Whittall reproductions, write for the IPI Gemtone Sample Folder.

### *FREE FOLDERS PROVE GEMTONE INKS GIVE MORE SPARKLE, FINISH, DEPTH, DETAIL*

Want more life and snap in your process printing? Then send for free comparison folder of work printed commercially with both IPI Gemtone process inks and IPI regular process inks. It's a real eye-opener.

This folder proves the superiority of Gemtone inks. With Gemtone, colors sparkle, dots are sharp, highlights bright. They dry on top of the sheet where they belong. That's why Gemtone inks give extra gloss and snap plus the illusion of depth—why they give a "premium finish" that brings a premium price from your customers.

IPI Gemtone process inks dry fast without heat on sheet-fed presses, trap perfectly even after weeks or months, virtually eliminate crystallization. Examples in folder weren't pampered. Both sets printed from same plates, stock, press under identical conditions.

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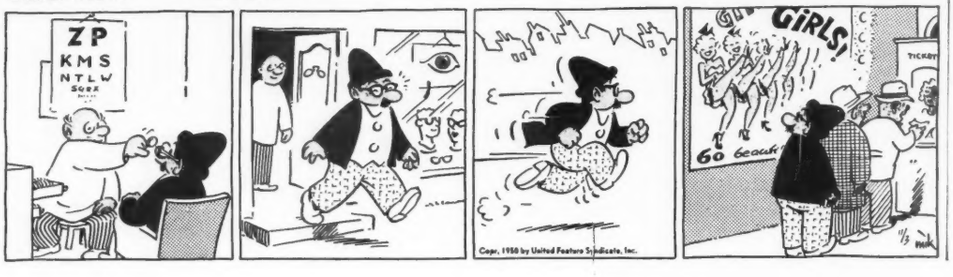

# PRINTING EQUIPMENT *Engineer*

**AN INDUSTRY-WIDE TECHNICAL PUBLICATION**

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.



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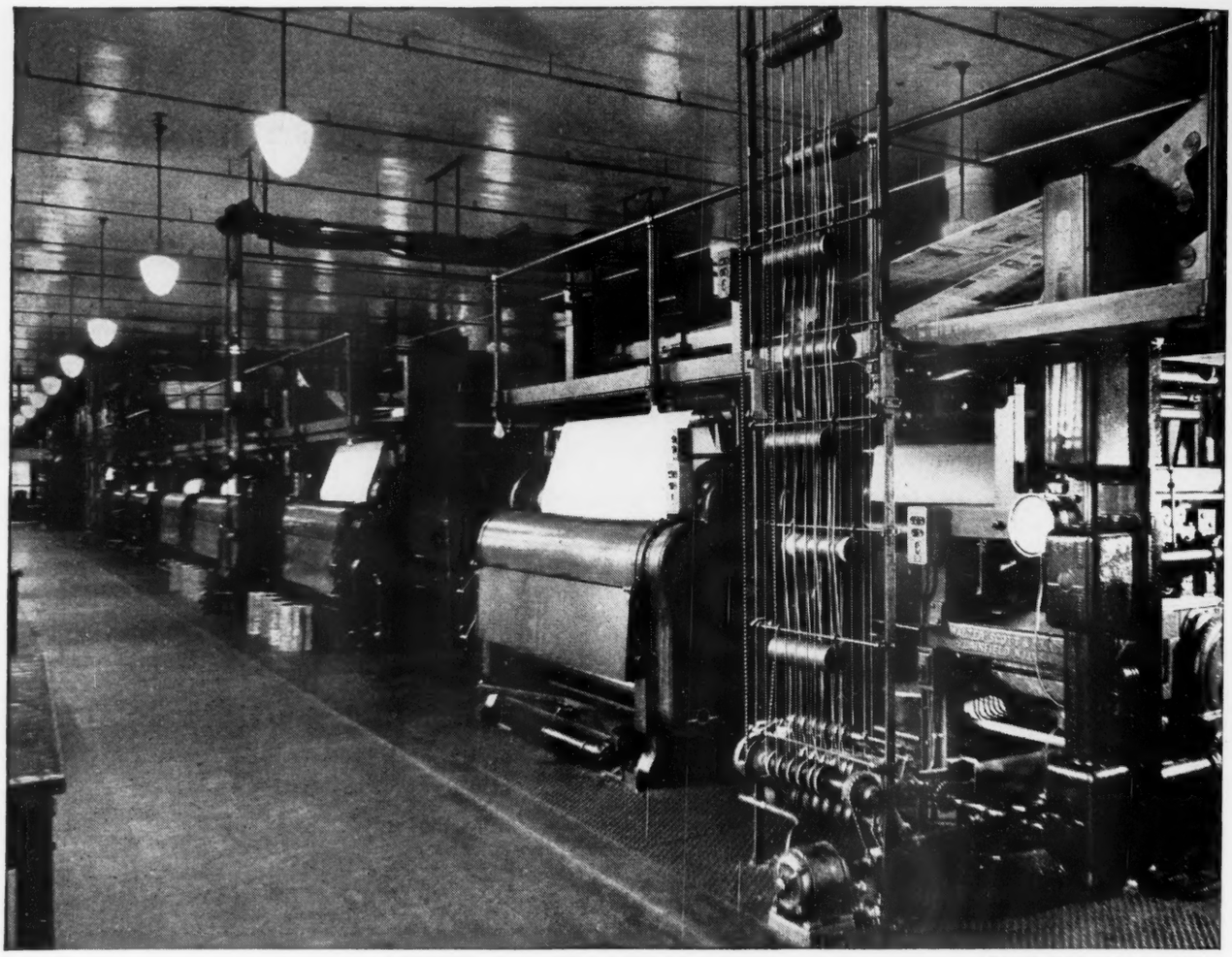

*Detroit News Action Photo*

## BUILT LIKE A BATTLESHIP...RUNS SMOOTH AS A WATCH

Like Battleships, SCOTT PRESSES are built to withstand the most rugged runs.

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PLAINFIELD, NEW JERSEY

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*Coronet Light* * Eden Light * Radiant Medium * **Cameo**

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**Ludlow Typograph Company** 2032 Clybourn Avenue, Chicago 14, Illinois

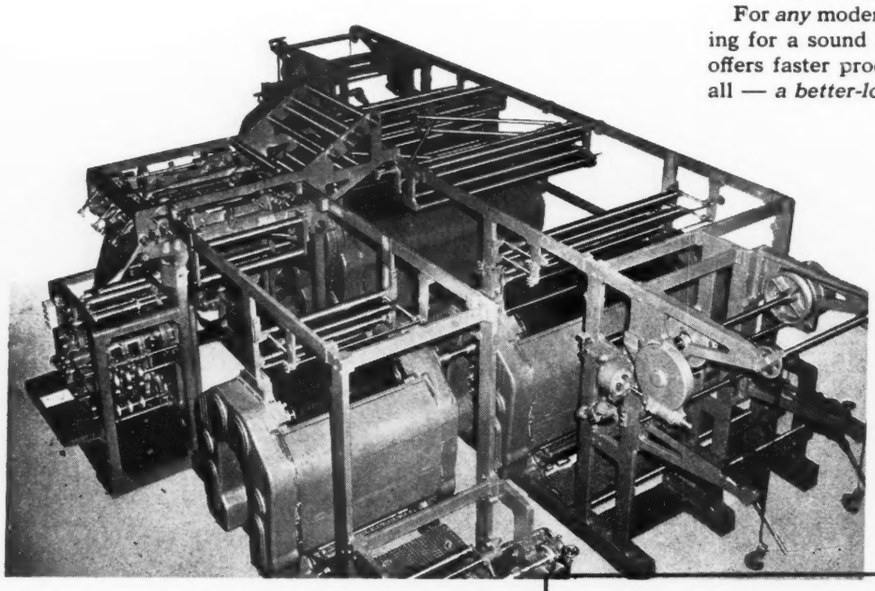
# A 40-PAGE WOOD Cosmopolitan Press IS NOW IN OPERATION at the DAYTONA BEACH NEWS-JOURNAL

A 40-page WOOD Cosmopolitan Press has been installed in the plant of the Daytona Beach (Fla.) News-Journal — fits "big city" technique into the planned budget of this smaller-city newspaper plant.

The compact Cosmopolitan tops the list of modern smaller-city newspaper presses, being the only press to incorporate these THREE outstanding advantages...

1—2-page jumps on collect runs
2—facilities for color
3—printing from semi-cylindrical plates

For *any* modern-minded newspaper publisher, looking for a sound investment, the Cosmopolitan Press offers faster production, greater economy and above all — *a better-looking newspaper for his readers.*



**There's a new Cosmopolitan Press with all its "big City" advantages for your plant and it can be arranged to meet your particular needs and space requirements.**

**Whether you prefer the straight-line or double-deck silhouette; whether you need 2 sixteen-page press units or 4 eight-page units — you can be sure there is a Cosmopolitan Press to fit your present set-up.**

IF IT'S Wood IT'S GOOD

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# Presswork is less work with rolls on TIMKEN® bearings

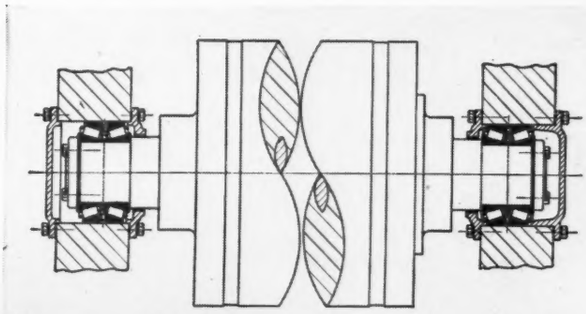
THIS Hamilton Rotary Web Press delivers a job *complete* in one operation. It not only does two color offset printing on face and one color rubber plate printing on reverse; it also numbers, punches, cross perforates, slits, and rewinds. And because offset rolls and perforating rolls are mounted on Timken® tapered roller bearings, operators find it easier to get accurate register and uniformly good impressions.

Timken bearings insure accurate, high-quality work by keeping rolls in rigid, permanent alignment. Loads from all directions—radial, thrust, and combination—are carried by the tapered construction of Timken bearings. Line contact between Timken bearing rollers and races provides extra load capacity. And Timken bearings eliminate all speed restrictions due to bearings on press rolls.

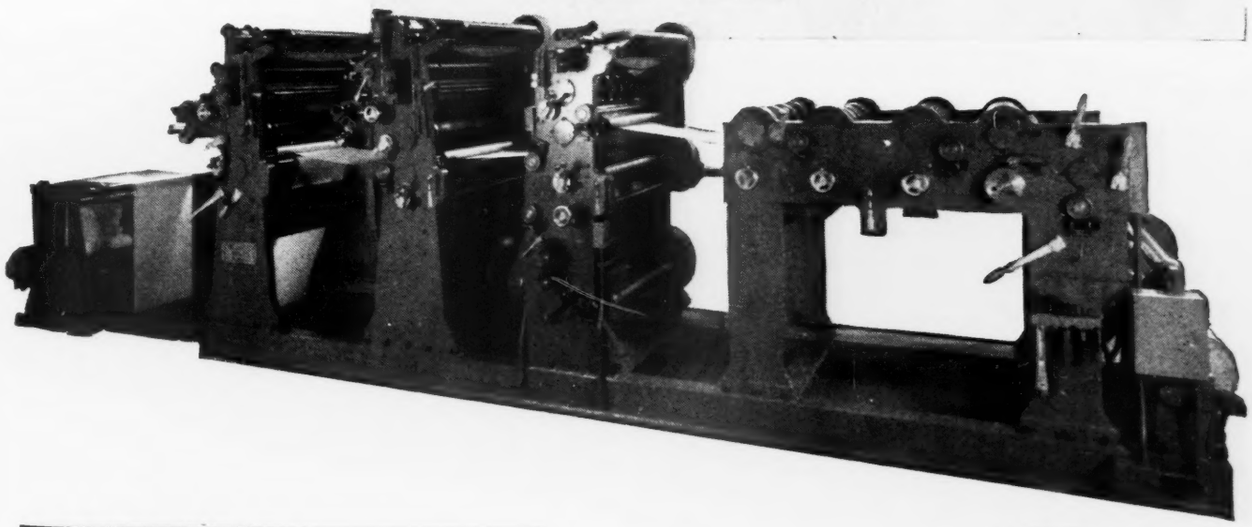
With Timken bearings on roll shafts, wear is prevented, maintenance costs minimized. Lubrication is easy and economical. Timken bearings normally last the life of the press because they're engineered for the job, made of Timken fine alloy steel and precision manufactured.

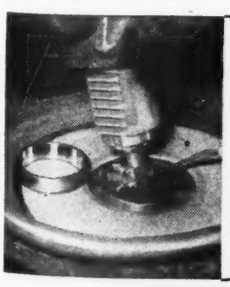
Insist on bearings stamped with the trade-mark "Timken" for every press you build or buy. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

*This symbol on a product means its bearings are the best.*



**HAMILTON TOOL COMPANY** mounts offset rolls and perforating rolls of Rotary Web Press on Timken bearings. Diagram shows typical press roll application of Timken bearings.





**FINISHED TO CLOSER TOLERANCES**

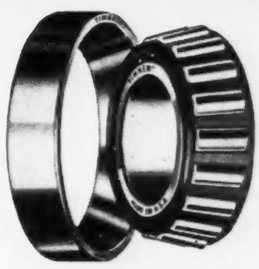
Finishing to incredible smoothness accounts for much of the precise, smooth rolling performance of Timken bearings. This honing operation is typical of the amazingly accurate manufacturing methods at the Timken Company.

The Timken Company is the acknowledged leader in: 1. advanced design; 2. precision manufacturing; 3. rigid quality control; 4. special analysis steels.

**TIMKEN**

TRADE-MARK REG. U. S. PAT. OFF.

***TAPERED ROLLER BEARINGS***



NOT JUST A BALL ◯ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ⓪ AND THRUST →⓪← LOADS OR ANY COMBINATION →✳←

# ENDURANCE does it!

## That's why these rollers excel, too!

● Yes, Sir! On the track or on the press . . . endurance counts big. In a printers' roller as in a star sprinter, it's the ability to stand the pace . . . the grit to keep going . . . that produces championship performance. That's why AMERICAN ROLLERS are always "out in front" in the estimation of so many leading printers and lithographers, large and small. For time has demonstrated conclusively that these excellent rollers consistently stand up. They've GOT WHAT IT TAKES to come through victoriously on the longest runs . . . to withstand the toughest grinds on today's high-speed presses without flinching. They're BUILT that way! Top-notch roller-making skill gives them a deep-rooted stamina to perform with maximum wearability . . . to cut costs, bolster your quality, make money for you. Order a set and notice the difference.

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Printing & Lithographic
ROLLERS

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# Late cuts no longer problem at the "Greenwich Time"!

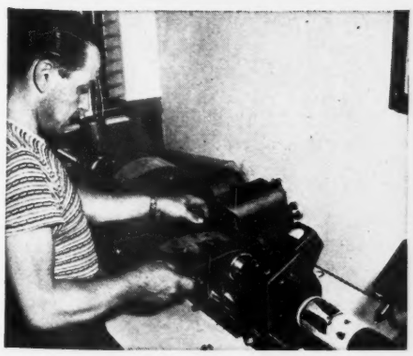
**"BY MOUNTING *SCAN-A-GRAVINGS* DIRECTLY ON THE STEREO, WE CAN MAT WHETHER OR NOT PICTURES ARE READY,"**
***says Mechanical Superintendent***

Every mechanical superintendent knows what a late cut or two can do to a pressroom schedule. But unless he has a Scan-a-graver there is little he can do about it.

Take the *Greenwich* (Conn.) *Time* where James Hundermark is mechanical super. They had the same difficulties as most papers when it came to late cuts until they installed a Fairchild Scan-a-graver last December.

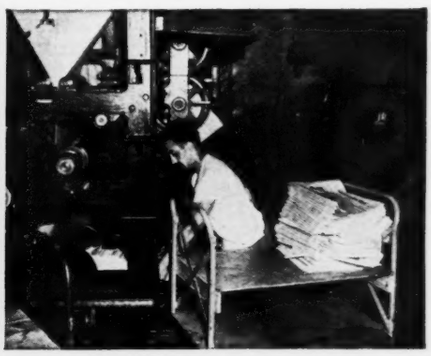
Today, the *Time's* story is different. By mounting plastic cuts directly to the stereos, they keep page forms flowing evenly to the matting press, in addition get maximum halftone quality from "direct printing." The pictures show how it's done.

**James Hundermark, Mechanical Superintendent** (right), sees to it that forms keep moving into matting press. Mat being lifted from form by Press Foreman Andrew Weiler has spaces for plastic cuts that will be mounted later on stereo.



**Plastic cut is removed from Scan-a-graver** by Don Palmieri, staff photographer and Scan-a-graver operator at the *Time*. His modern, fully equipped darkroom is only a few feet away. The *Time* uses five to seven times the cuts it did before installing the Scan-a-graver.

**The cut reaches the pressroom** often only a few minutes after the photo is developed. Here, it is mounted in place on the stereo with double-faced Scotch tape. Correct printing height for plastic cuts is provided for by blocking in form before matting is begun.



**The paper is off the press.** One of the pictures in this edition left the photographer's darkroom only 27 minutes before press time, but the 1 p.m. press deadline was met with ease. Extra care, from photo to stereo, helps the *Time's* halftone quality to rank with the best.

***• Fairchild customer service representatives are located from coast to coast. One of them has been assigned to your area and will be glad to visit you at your convenience. If you'd like to arrange for a call, or if you want more information on the Scan-a-graver, write today to Fairchild Camera and Instrument Corporation, 88-06 Van Wyck Boulevard, Jamaica 1, N. Y., Dept. 100-24E.***

FAIRCHILD
SCAN-A-GRAVER

# The Shortest Distance

between

a production order and a bill paid!

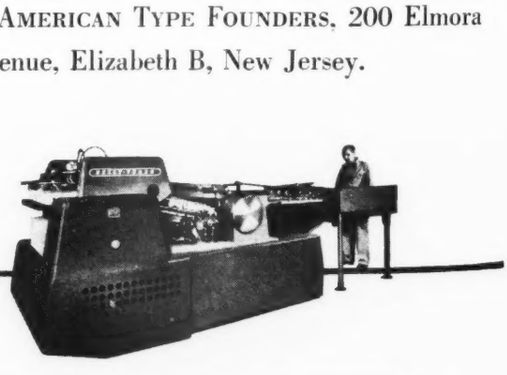
The quicker you deliver a top quality printing job to a satisfied customer, the faster the check comes in. That's where a Kelly Three pays off in fast profits for you.

For sheets come out of a Kelly Three onto the delivery pile at speeds ranging up to 3500 an hour. Rigid frame construction and great impressional strength mean that adjustments and makeready stay put longer.

A Kelly Three is completely accessible, too. It's wide open— you can really get *at* it. Handy controls are centralized within easy reach.

Ask your ATF representative for all the facts and find out why a Kelly Three costs you less to produce every 1000 saleable sheets.

AMERICAN TYPE FOUNDERS, 200 Elmora Avenue, Elizabeth B, New Jersey.



ATF

**BETTER, MORE PROFITABLE PRINTING FROM THE WIDEST LINE OF PROCESSES...**

**GRAVURE...LETTERPRESS...OFFSET**

*Type faces shown are: Lydian Bold, Bodoni Book*

Miami Daily News gets accurate register at 4700 or 3850 ft. per min. chain speeds. Six 100 hp motors are connected through individual Link-Belt Silverstreak Silent Chain and two-speed Herringbone Gear Drives.

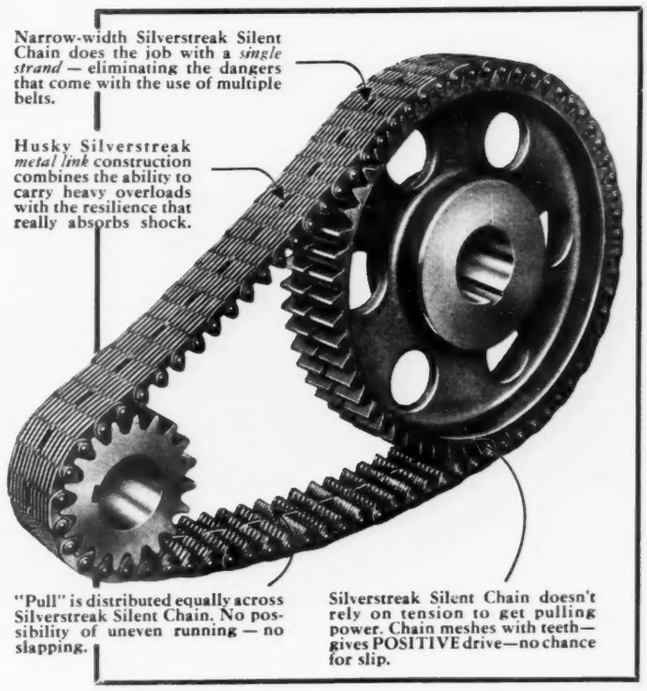
# Pioneer high-speed newspaper press drives still running strong after 11 years

## LINK-BELT Silverstreak Silent Chain helps Miami Daily News get accurate register, trouble-free operation

On Jan. 2, 1940, what was then the world's fastest newspaper press began printing the Miami (Fla.) Daily News. Today it's still in use—without a single replacement on its Silverstreak Silent Chain Drives.

And today you'll find Link-Belt Silverstreak Silent Chain doing an efficient, low-cost job on the majority of all high-speed, high-horsepower presses. That includes not only newspaper—but magazine and rotogravure presses as well.

For complete information, call the Link-Belt office near you. And for better, lower cost printing, make sure your next press is driven by Link-Belt Silverstreak Silent Chain.


Narrow-width Silverstreak Silent Chain does the job with a *single strand* — eliminating the dangers that come with the use of multiple belts.
Husky Silverstreak *metal link* construction combines the ability to carry heavy overloads with the resilience that really absorbs shock.
"Pull" is distributed equally across Silverstreak Silent Chain. No possibility of uneven running — no slapping.
Silverstreak Silent Chain doesn't rely on tension to get pulling power. Chain meshes with teeth—gives POSITIVE drive—no chance for slip.

**LINK-BELT**

**SILVERSTREAK SILENT CHAIN DRIVES**

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices in principal cities.

12.563

# the SPERRY 1000 roto printer

*wrappers*

*labels*

*cartons*

**SPECIFICATIONS:**

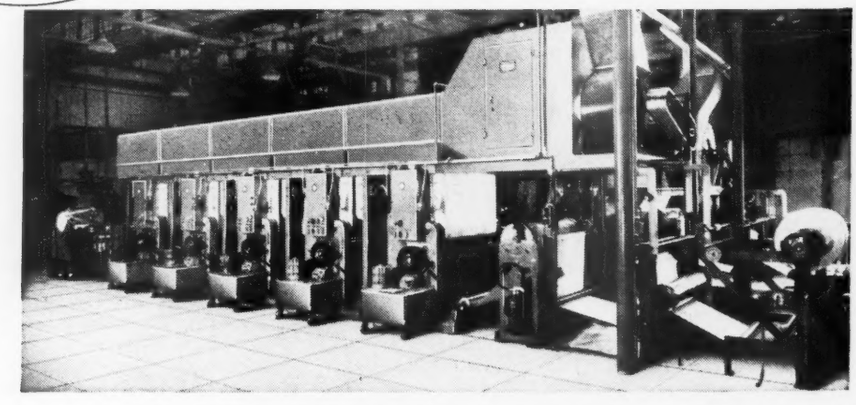
- Width: 26" to 42"
- Circumference (Maximum): 46"
- Speed: Designed to run at 1,000 ft./min.

## *for lower operating costs*

Leading printing plants throughout the country are establishing new production standards of speed and quality for colorful wrappers, labels and folding cartons with their Sperry 1000 rotogravure presses.

The Sperry 1000 roto printer is a solution to higher production, lower operating costs and greater profits.

Find out today how *you* can boost profits with the Sperry 1000. Let one of our representatives show you how its many advantages—High Speed (1,000 feet per minute), Rigid Construction with Completely Ball Bearing Mounted rollers, intaglio shafts and gears, and most important of all, its **fast makeready changeover time**—can mean more profitable volume for your plant!



FORD

**For complete information, please write to:**

**FORD INSTRUMENT COMPANY**
*Division of The Sperry Corporation*
**31-10 Thomson Ave.**
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## why more people choose

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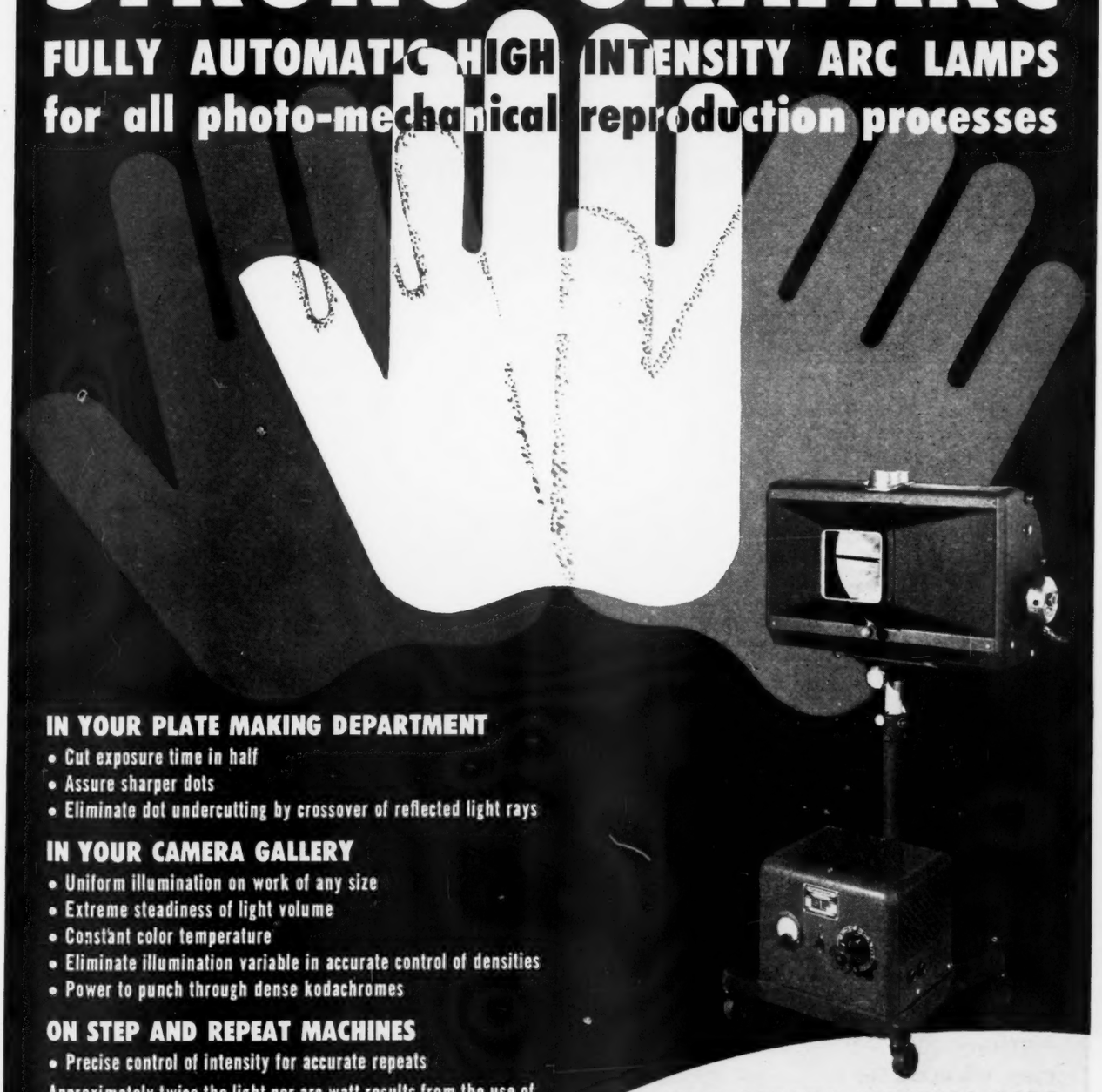
## FULLY AUTOMATIC HIGH INTENSITY ARC LAMPS for all photo-mechanical reproduction processes



**IN YOUR PLATE MAKING DEPARTMENT**

- Cut exposure time in half
- Assure sharper dots
- Eliminate dot undercutting by crossover of reflected light rays

**IN YOUR CAMERA GALLERY**

- Uniform illumination on work of any size
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- Power to punch through dense kodachromes

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- Precise control of intensity for accurate repeats

Approximately twice the light per arc watt results from the use of a silvered glass reflector, instead of a metal reflector. Adapters to fit most cameras and photo-composing machines. Present line supply wiring is usually adequate.

**THE STRONG ELECTRIC CORP.**

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# 480 PLATES A DAY

## at N.Y. World-Telegram and Sun from one machine equipped with Calrod* heaters

Newest of the "Telly" casters is a 10-ton capacity Wood Automatic Autoplate. About 480 plates each day come off this machine, at a maximum speed of four a minute. A total of six Autoplates receive type metal from three furnaces equipped with G-E Calrod heaters to make all the plates for seven daily editions . . . with total circulation of nearly 600,000! Each of the three furnaces is equipped with thirty-six 10-kw, 230-volt Calrod cast-in immersion heaters to quickly melt the metal and economically keep it molten.

**DEPENDABLE** Calrod heaters also work *24 hours* a day in the five-ton capacity job pot . . . and are presently in their eighth year of service.

**LITTLE MAINTENANCE** is required for Calrod heaters at the World-Telegram and Sun. George Sturges, Electrical Superintendent, says, "Calrod heaters are doing a fine job for us, and give little trouble under hard usage. Maintenance is so easy that we keep our own supply of renewal parts."

**CALL, WRITE OR SEE** the nearby G-E Sales Office for recommendations on your melting job. For other helpful information, write Sect. 720-54, General Electric Co., Schenectady 5, N. Y.

*Registered Trade-mark.

720-54

GENERAL ELECTRIC


**Get a good run for your metal money... buy Blatchford**

When you put your good money into metal, be sure you get a good run for it . . . both ways – in quality and quantity.

Buy Blatchford . . . made to make good impressions, whether you print a few repro proofs on coated or run newsprint by the mile.

Blatchford Metal contains the stuff of which good type, slugs and plates are made—clean lead, tin and antimony – alloyed with nearly a century's worth of metal-handling know-how.

In the composing machine or the plate-caster, Blatchford melts smoothly, flows freely, molds true to the mat or matrix.

On the press, Blatchford has the guts to stand the grind of long runs, to turn out page after page, sheet after sheet, of clean, crisp printing.

Blatchford Metal is made in compositions to precisely fit all casting machines – single type, slug or plate.

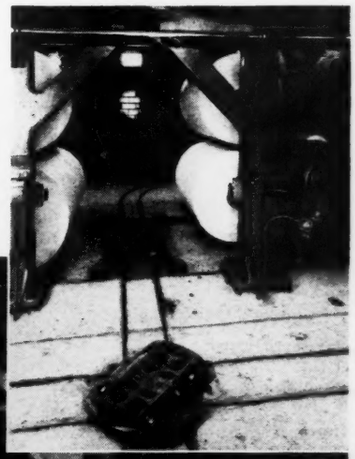
Buy Blatchford – it gives you *good* runs for your money.

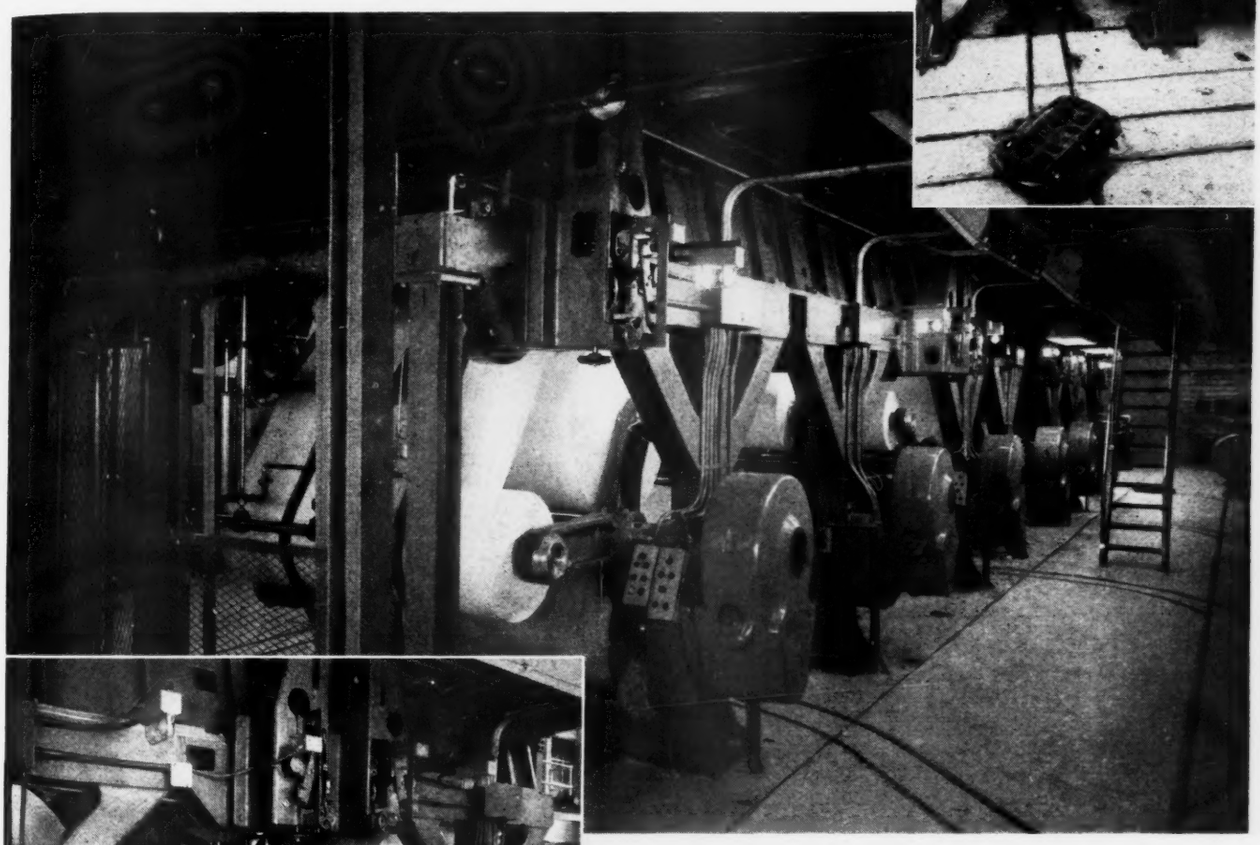
*NATIONAL LEAD COMPANY – Atlanta, Baltimore, Chicago, Cincinnati, Cleveland, Dallas, Philadelphia, Pittsburgh, St. Louis; New York: E. W. Blatchford Co.; New England: National Lead Co. of Mass., Boston; Pacific Coast: Morris P. Kirk & Son, Inc., Los Angeles.*

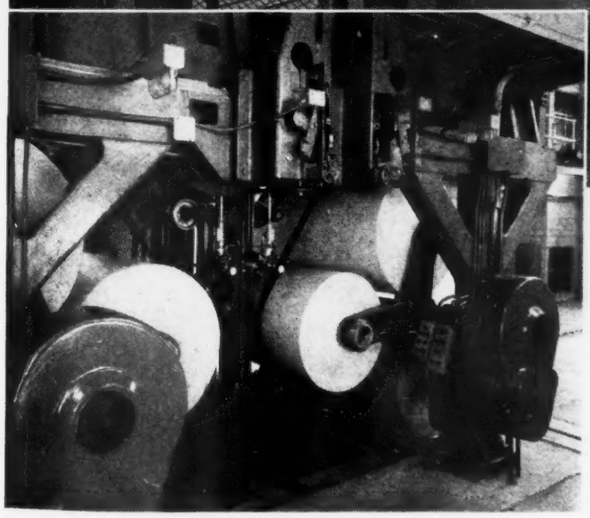
**Blatchford**
*is the NATIONAL name for dependable metal . . . and for "Honeycomb" base.*

# *Dilts-Kohler*
## *at*
# CANTON REPOSITORY

Transfer table and roll dollies installed by Dilts at CANTON REPOSITORY







Close-up on two Dilts-Kohler "Flying Pasters" at CANTON REPOSITORY

For the finest in tension control the publishers of the Canton Repository installed seven Kohler Reels and tensions shown in the large photograph. The pneumatically controlled running belt tensions keep web breaks at a minimum, without scuff or paper dust. Tension is uniform throughout each roll, but can be varied at will.

A simplified slow speed pasting method, without special apparatus is used in this operation. Kohler low dollies, maximum traction track system, and transfer tables were also furnished.

Dilts-Kohler equipment soon pays for itself in time and waste savings on high speed web presses.

Other equipment available includes the Flying Paster, and the Flying Starter (Winder) for continuous high speed operation.

## *DILTS MACHINE WORKS*
Fulton, New York

SHARTLE BROTHERS MACHINE CO., Middletown, Ohio
Divisions of THE BLACK-CLAWSON COMPANY, Hamilton, Ohio
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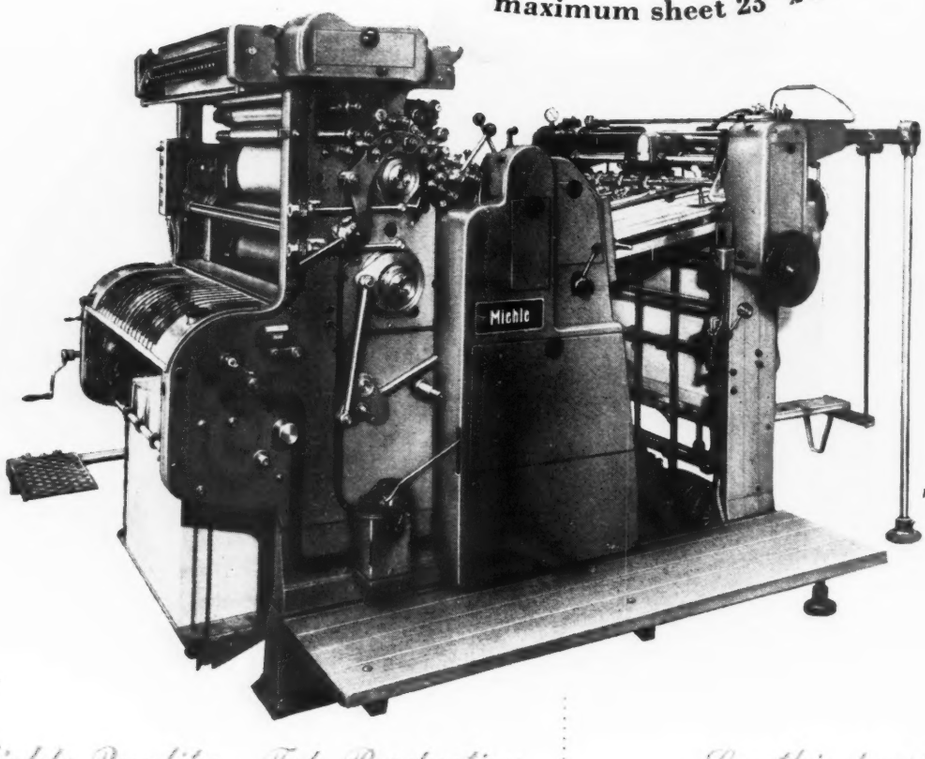
Dilts

MIEHLE

# 29 OFFSET

**the small press with the big press features**

**maximum sheet 23″ x 29″ • speed up to 7000**




*manufactured for Miehle by Faber & Schleicher Offenbach-am-Main*

*Miehle Quality... Top Production*

- ***Simple Stream Feeder***
- ***Pull Guide—Swing Gripper Register***
- ***Maximum Ink Coverage***
- ***Rugged Construction***

*See this press in operation*

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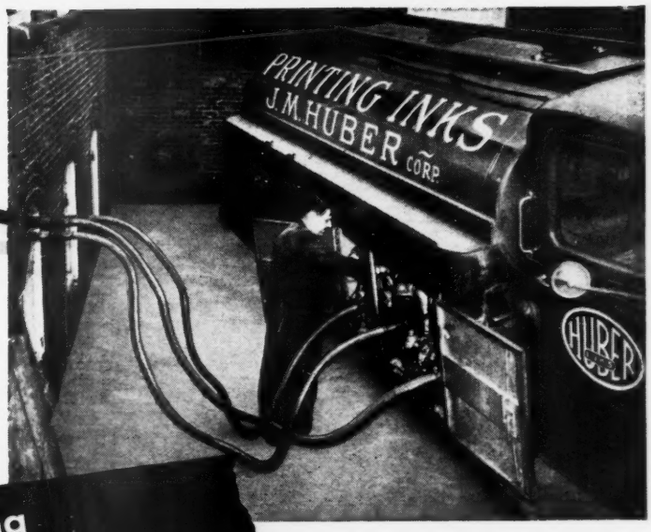
**Miehle Showroom • 219 East 44th Street**

The Miehle

**MIEHLE PRINTING PRESS & MANUFACTURING CO.**
*Chicago 8, Illinois*




**"No. 1 Method of Handling Volume Comic Inks."** —Des Moines Register Tribune

"Assures uniform inks, high quality... no question of its economy." —Western Printing and Lithographing Co., Poughkeepsie, N. Y.

"Eliminates handling 90-odd drums per month... savings in manpower, clingage and storage space."
—Lafayette Color Press, Inc., Bridgeport, Conn.

"A neat, clean pressroom... absolutely no waste of ink... deliveries at 30 below zero." —Minneapolis Star and Tribune

"Pressmen no longer climb dangerously around presses with buckets of ink... simple to keep record of ink used on each job."
—Holyoke Magazine Press, Holyoke, Mass.

"More consistency in our color printing."
—Danner Press, Inc., Akron, Ohio

## Huber Multi-Color Tank Truck Service Slashes Pressroom Costs

Huber's new method of pumping red, blue and yellow inks, simultaneously, from specially-constructed trucks to pressroom storage tanks is revolutionizing comic-plant operations 'round the nation.

Multi-color tank deliveries eliminate costly handling, storage, mess and clingage, taken for granted with old-fashioned drums. Huber's piping of colored ink to overhead or ground storage tanks—from where it flows directly to presses—assures uniform ink quality...a neater plant... better pressroom morale.

All these advantages can be yours, free of cost. Ask us for details.

HUBER **J. M. HUBER CORPORATION**

*Huber Products in Use Since 1780*

Plants: Bayonne, N. J. • Borger, Texas • Boston, Mass. • Brooklyn, N. Y. East St. Louis, Ill. • McCook, Ill.

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# GOING LIKE *wild-fire*

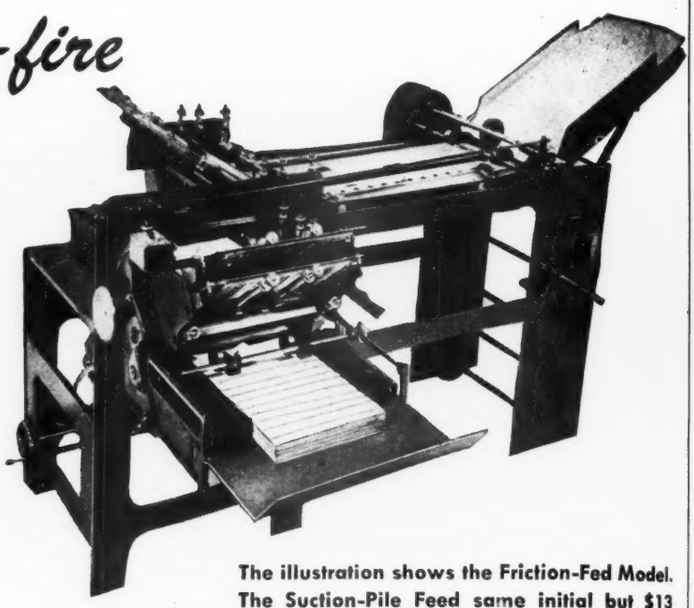
Fast as they can be shipped... over 600 in recent months... in April every business day five or more Printers and/or Bookbinders ordered the

**New Junior 17x22 FIVE-FOLD Automatic BAUMFOLDER... Goldmine**

**Only $85** *initial and $40 per month for 30 months.*

It's a many-purpose, many-PROFIT 5-fold automatic folder... automatic rotary cutter (cuts out bleed trims and end trims WHILE folding)... automatic scorer... automatic PERFORATOR (accurate to a hair, end to end).

Five folding plates... 60 different styles of folds... 4 pages to 24 pages in one operation. Folds thinnest bible stock or onion skin. Perfection in accuracy... no less. Production that creates GOLDEN profit... has broken through the "ceiling" that paper can travel automatically... the ultimate in production (profit). It will pay for itself over and over long before you pay for it.



The illustration shows the Friction-Fed Model. The Suction-Pile Feed same initial but $13 per month additional.

**RUSSELL ERNEST BAUM INC.**
615 CHESTNUT STREET
PHILADELPHIA

*For the man at the feeder ... profit*
With Harris feed rolls, this pressman has accurate control of the sheets, obtains closer color register—in combination with Harris stream feed. He can get work underway faster, run more accurately and with fewer stops on a Harris. His production record is better. That's part of what we mean by a pressman's profit.
*Plant owners and their customers* also profit when jobs are run on Harris presses. More top-quality work every day means satisfaction, more business and more jobs all down the line. Learn more about the new Harris presses ... write:
HARRIS-SEYBOLD COMPANY CLEVELAND 5, OHIO
Fine graphic arts equipment for everybody's profit

# "An Ansco man is always ready to render service"

***Say***

**Charles Bohrer,**

**Charles Cook**

**and Roland Haynes**

***Officials of***

**HAYNES LITHOGRAPH COMPANY**

**Silver Springs, Md.**

Many executives and technicians, in many of the leading plants in America find it pays to discuss their problems with the Ansco man who comes to call on them. Next time he calls on *you*, ask him about the exhaustive laboratory and field tests that have proved Ansco's new REPROLITH ORTHO TYPE B FILM ideal for faster, more economical production.

## Specify Ansco Reprolith Ortho Type B

**HERE ARE ITS PRINCIPAL FEATURES**

- **SHORTER EXPOSURE TIME:** Always an important factor in production operations.
- **HIGH ORTHOCHROMATIC SENSITIVITY:** Extended color sensitivity allows the use of filters, permits better copies and eliminates much of the hand work that would otherwise be necessary.
- **MAXIMUM LATITUDE IN DEVELOPMENT:** A vital requirement in helping to reduce makeovers.
- **FINE RESOLVING POWER:** Ability to register fine detail proved higher than with average film.
- **CLARITY IN WHITE AREAS:** Stains and discolorations eliminated.
- **FINE DOT ETCHING QUALITIES:** Dot edges come up pin-point sharp in shadows.
- **STEEP GRADATION:** Provides maximum contrast.

***Contact your Ansco Representative, today!***

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*"FROM RESEARCH TO REALITY."*

# Uncle Mat Says...

6 SERVICE BRANCHES
31 FIELD CREWS TO
SERVE YOU DAY AND NIGHT
COAST-TO-COAST AND CANADA

**MATRIX**

## CONTRAST SERVICE

**prevents type slips**

**like this . .**

**he had the privilege also of viewing a number of rare Egyptian Mummies**

Machine operators sometimes "feel" certain errors such as wrong letters and transpositions. If the line in the assembler is easy to read, errors are easily detected and corrected before the lines are cast. In this way, the Matrix Method makes it possible to prevent fully one-third of all errors in original composition.

● Now with Matrix Contrast Colors (red, green, yellow, orange) "wrong font" errors also are quickly detected and positive selection of "pi" matrices is assured (at a glance.) Black and White or Colors are applied to all your matrices, old and new, at a very nominal yearly service charge by trained service crews from coast-to-coast and Canada. A call or letter to our nearest service branch will bring 'reasons why' you should use only the time-tested Matrix Method on your line-casting machines. Do it today!

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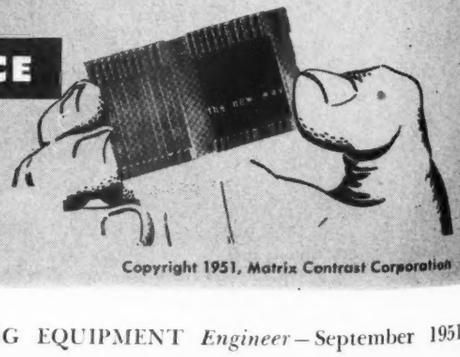

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PRINTING
EQUIPMENT
*Engineer*
September 1951

# Shop Clinics Held By Craftsmen

**Five New England Clubs hosts to 1000 Intl. Assoc. of Printing House Craftsmen delegates, members and ladies — Technical Clinic summaries.**

**By MacD. SINCLAIR and EDWARD H. OWEN**

UNDER the chairmanship of Past International President Gordon Ruiter, five New England Craftsmen's Clubs were hosts to the 32nd annual convention of the Intl. Association of Printing House Craftsmen, Hotel Statler, Boston, August 19, 20, 21 and 22. The New England Clubs participating were Boston, Connecticut Valley, Providence, New Haven District and Worcester. Registered attendance was approx. 1000.

It was revealed at the convention during the report of Executive Secretary Pearl E. Oldt that there are now 86 clubs and in excess of 12 thousand members.

Great interest was shown in this year's local club bulletin contest. There were approx. 140 entries in the Printing Week stamp design contest. Among the resolutions passed was one in which the International Association commended the work of the Research and Engineering Council of the Graphic Arts (management sponsored), and one related to the work of the Technical Association of the Graphic Arts Industry. It is also noteworthy that cognizance is being taken of the importance of the Foreman's Training Program being undertaken jointly by PIA and LTF. President Winkler appointed a committee to work with this group headed by William Gutwein of the C. T. Dearing Printing Co., Louisville, Ky. Winkler made a number of other appointments which indicate expansion of usefulness of the International to local clubs and individual Craftsmen members throughout the jurisdiction.

It was voted to hold the 1952 convention in St. Louis on August 10, 11, 12 and 13. Stuart Braznell, St. Louis Craftsman, will be general chairman of the 1952 convention.

An invitation was presented by Oliver B. Granum of the Ninth District to hold the 1953 convention in Dallas. The invitation was accepted.

An invitation for the record was received from the Philadelphia Club of Printing House Craftsmen to hold the 1954 International convention in that city. Since the By-Laws stipulate that the convention city shall be selected two years in advance, no action was taken.

## *Problem Solutions*

ON Monday afternoon, August 20, International Vice President Howard N. King presided at what had been announced as a Problem Clinic. The speakers were Perry R. Long, General Mgr., Bryan-Brandenberg Co., Los Angeles; Basil M. Parsons, Secretary and Sales Mgr., Thomson National Press Co.; John R. McLean, Mobilization Committee Chairman IAPHC; Edward Aitken, Pressroom Supt., Bryant Press, Ltd., Toronto, Can.; Craig R. Spicher, Research and Development, Miehle Printing Press & Mfg. Co., Chicago; J. Gus Liebenow, Chicago; John J. Pluhar, General Mgr., Maurice Leeser Co., Baltimore, and President, Baltimore Craftsman's Club; Frank Gainsboro, President, Strathmore Press, Inc., Boston.

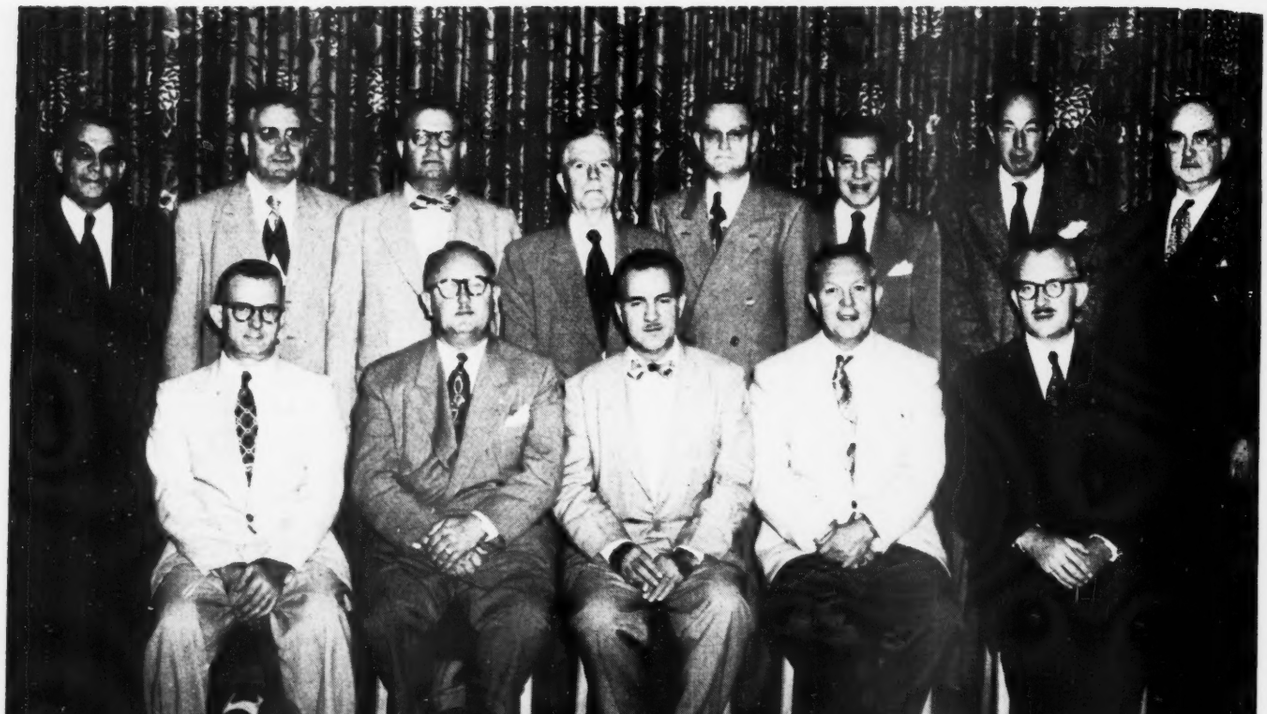
### Not Articulate Enough

Perry R. Long first discussed the problems associated with color printing at the *American Weekly* when he was associated with that publication. The problem was in printing color on news stock with thin, greasy ink. Even though the basic principles of printing are the same, a lot of skill is required. Practically all jobs are tailormade. Most plant executives are not engineers. Printing flows through many hands in the agency, the artist, the engraver and so on without, in many instances, any conception of the end result. The practical approach is to ask: How will the job come out? The great problem used to be that there was no planning in harmony with the end result. He cited examples of planning by mentioning *Time*, *Life* and also the Milwaukee *Journal's* book on newspaper color printing. In each planning is carried on in harmony with the end result. For certain types of color printing in Los Angeles, delicate vignettes are eliminated, and plain type printed in black over solid red (or other color) backgrounds are provided for legibility. He showed examples of rotogravure and letterpress publication printing in which the artist asserted it was Long's business to reproduce his art. This statement was made by the artist without taking into consideration the limitations of the process. On the other hand, Long stated the printer should at all times try to give the customer what he wants. If, however, he orders too fine a halftone screen, the matter should be explained to the customer. He said: "We are not articulate enough with people who handle work for the customer. We should explain limitations of the process and insist upon suitability of copy to the process."

### When To Plate

John A. McLean, Chairman of the IAPHC Mobilization Committee, discussed the headache caused by necessity for getting out a book on rush order. The pages were set under high pressure conditions and there was no time for making plates. There were 450 copies to be printed immediately with 50,000 copies or more to be printed later. The problem was how far to go in printing from the type and afterwards plating the pages. Another problem was how many proofs could be taken before the type would show too much wear to be worth plating. Who would pay for the forms with three to four pages up for making up the foundry form? Also the time involved in removing the type from the press chase (16 pages up), locking up for foundry, and pulling foundry proofs? It was decided to produce the plates by stereotyping after the original rush order was completed. The forms for the press were made up in a 16 page chase; the chases were standardized; 1½ in. margins were provided; the spacing material was also standardized. A steel frisket, 0.155 in. thick was provided the same size as one-half the chase area; steel bars were fitted in between the type pages for bearers. Now, the question of bolsters around each page was solved by machining a slot in the frisket to correspond to what would be the narrow strip between bearers and type in the foundry form.

When the 16 page form, right from the press, had been placed on the molding press table, the steel frisket was laid on one half of the chase. After molding one-half, the form was turned around and the other half molded with another mat. Each half of the form took one full size mat, 20 in. by 24 in. The molding combination consisting of a blanket, two gray paper felts and a molding board were



(Photo courtesy IAPHC Public Relations Commission)

**Elected and Appointed Officers, International Association of Printing House Craftsmen, Inc., taken at August 1951 Convention, Hotel Statler, Boston**

Front row (left to right): Treasurer—Albert L. Kolb, Manager, Printing Dept., Marine Trust Co., Buffalo, N. Y.; First Vice President—Gordon J. Holmquist, Partner, Cole-Holmquist Press, Los Angeles; President—J. Homer Winkler, Technical Advisor, Battelle Memorial Institute, Columbus, O.; Second Vice President—Howard N. King, Vice President, The Maple Press, York, Pa.; Third Vice President—Tom Mahoney, Plant Mgr., Regensteiner Corp., Chicago.

Back row (left to right): Chairman Technical Commission—Edward A. Aitken, Pressroom Supt., The Bryant Press, Toronto (Ont.) Can.; Representative at Large—Elmer Leach, Leach Printery, Des Moines, Ia.; Chairman Publications Commission—Lee Augustine, Vice President, Printing Machinery Co., Cincinnati, O.; Immediate Past President—Fred C. Baillie, Ottawa (Ont.) Can.; Executive Secretary—Pearl E. Oldt, 18 E. Fourth St., Cincinnati, O.; Chairman Public Relations Commission—Amadeo R. Tommasini, Plant Mgr., University of California Press, Berkeley, Calif.; Chairman Membership Commission—Harry Christopher, President, Paper Supply Co., Baltimore, Md.; Asst. Chairman Membership Commission—George Wise, Superintendent, Dugan-Millis, Inc., Cleveland, O.

Other International appointments by President J. Homer Winkler are as follows:

Historian—Neil Powter, Sales Promotion Mgr., Howard Smith Paper Mills, Ltd., Montreal (Quebec) Can.

Printing Week Celebration Committee—Edward Stoehr, Production Mgr., The Meerow Press, New York, N. Y.

Mobilization Committee—John R. McLean, Washington, D. C.

Supervisory Training Committee—William Gutwein, Manager, C. T. Dearing Printing Co., Louisville, Ky.

Club Bulletin Contest Committee—Harold Crankshaw, Washington, D. C.

Constitution and By-Laws Committee—Alfred T. Peters, Vice President and Sales Mgr., Thos. C. Peters Printing Co., Utica, N. Y.

Redistricting Committee—Basil M. Parsons, Secretary-Sales Mgr., Thomson National Press Co., Franklin, Mass.

Club Programs Committee—Harold Gale, The Waples-Platter Co., Fort Worth, Tex.

Safety Committee—W. S. Andrews, U. S. Government Printing Office, Washington, D. C.

Instruction Literature Committee—Mark Wilson, Atlanta, Ga.

Graphic Arts Education Committee—Fred Landon, Instructor, Dunwody Industrial Institute, Minneapolis, Minn.

Participating Memberships Committee—J. L. Frazier, Consulting Editor, the *Inland Printer*.

International Advisory Council—Gradie Oakes, President, Process Color Plate Co., Chicago.

placed on half the form. The other half of the form was molded in like manner. If each half of the form checked out OK, then the type could be discarded at once. In this way the problem of type storage, was eliminated and rapid production of either curved or flat plates accomplished.

### Cylinder Gripper Adjustment

Edward A. Aitken, Pressroom Supt., Bryant Press, Ltd., Toronto, (Ont.) Can., said one weakness in plants is the lack of job planning. He strongly urged establishment of a plant planning council consisting of the estimator, production manager, purchasing agent, plant superintendent and departmental foremen. He said experience in the plant is there but so often it is not used. He suggested the council meet once a month preferably away from the plant with the firm acting as host for the dinner. The potential work discussed can be used as a guide for similar work coming into the plant. Through the council the much-wanted departmental cooperation would be established. On jobs of a repeat nature, mistakes on the first run can be discussed to avoid reoccurrence.

Mr. Aitken described an improved method of setting the grippers on a cylinder press. Before making the new style adjustment, pull 10 sheets with the conventional setting used previously. The procedure is as follows: (1) Place sheet in position at front guides; (2) Turn press over until closing pin is $\frac{1}{16}$ in. past center coming out of the tumbler; (3) Insert feeler blade 0.008 in. thick between top of the closing pin and tumbler; (4) Loosen all grippers; (5) Reset or tighten grippers with sheet under grippers; (6) Insert tommy pin in gripper bar; now remove the 0.008 in. thick feeler blade; (7) Run

one of the sheets printed by old adjustment through the press on the new setting; first mark the first printing for easy identification. Making the adjustment by this method will provide a finer setting and will reduce the gripper bite.

### Finding Paper Grain

Craig Spicher, Research and Development, Miehle Printing Press & Mfg. Co., discussed how to determine the wire and felt sides on a sheet of machine coated paper. He said it is easy enough to do this on uncoated stock, but with coated stock the wire and felt sides are not visible to the eye. The procedure is as follows: Fold the sheet in two directions at right angles by hand. The direction of grain will be apparent upon examining the folds. The "with grain" fold will be the smoothest. Now, to determine which is the felt or wire side of the sheet, tear a semi-circular section spanning approx. 4 in. across one corner of the sheet perpendicular to the grain. Tear with the circular motion to show a splitting of the coating from the pulp. Turn over the sheet and repeat the operation. Compare the two torn corners of the sheet. The side which shows greatest removal of coating is the felt side. Mr. Spicher stated there are printing firms which insist on making ready on the wire side of the coated sheet so the job will print satisfactorily on the felt side. Some national advertisers insist in their contracts that their advertisements must be printed on the felt side of the paper. In some cases the roll stock upon which the publication is to be printed must be rewound.

### Gloss Inks on Boxboard

J. Gus Liebenow, Chicago, discussed *Gloss Inks on Boxboard*. In approaching his subject, he explained that three of the five standard grades of boxboard are not suited to printing with gloss inks. With the proper selection of plates, however, two of the five grades are suitable.

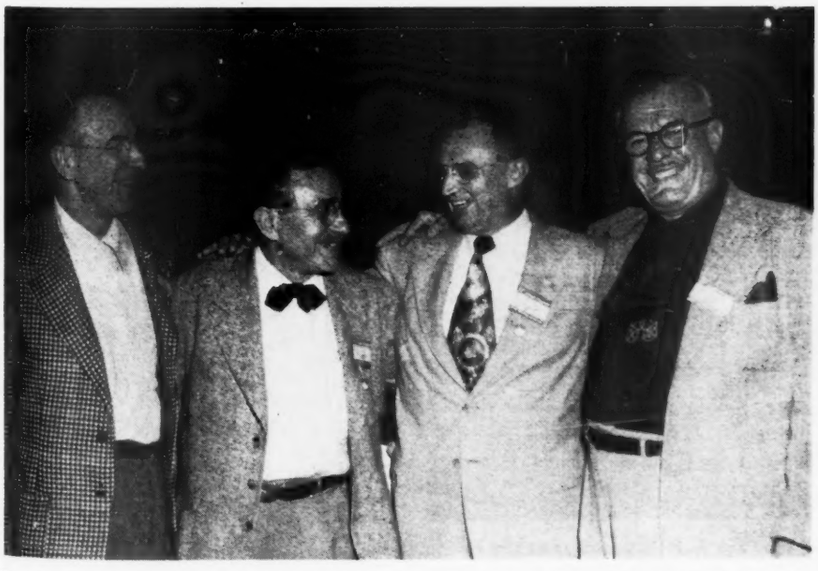
"The purpose of gloss ink when printed," he said, "is to be held in suspension until the drying period sets it, and in this wise to permit the gloss ingredients to give a semi-varnished appearance.

"In printing on boxboard this is not possible, as the soft backs are just similar to the texture of your daily newspaper, and act a great deal like a blotter, having absorption qualities, and allowing for easy penetration of the inks and their vehicles, and in consequence do not remain in suspension, so that the gloss properties are absorbed by the board. Boxboard is made only with a white 'face' or liner, a little less than 0.003 in. thick, and even in the case of coated boards the face is extended only an additional 0.002 in. or 0.003 in. This is not enough to prevent the natural penetration of ink, gloss or otherwise, but it is a favorable circumstance when operating with what we call flat inks."

The speaker explained that in endeavoring to achieve gloss with gloss inks on boxboard, many operators are forced to carry a great deal more color or ink film than is normally required. Consequently, the thicker the ink film the slower the drying period. Then, as one sheet drops on the other on the jobber board of the extension delivery, too much is left on the surface and is transferred to the bottom of the sheet following . . . . With the excess of ink (using gloss ink), the news back is picked up by the top of the sheet and will give off some of the fibre of the under part of the board, which can result in serious offset, or serious marring or smudging of the print on the top surface of the underneath sheet.

Mr. Liebenow stated that a variation of 0.003 in. light or heavy in the thickness of boxboard is generally accepted in the carton trade. Thus, when printing from too-fine halftone screens, gloss inks (due to the varnishes used) tend to close up both on the printing plate and the board surface. This causes frequent stoppages for washing out plates and ensuing waste of material. He advised against printing one color over another in gloss inks. One color down gloss ink becomes hard, or turns into closed surface. For this reason, box plants who know their business do not run gloss inks except on single-color subjects.

**Don Nixon (left), Superintendent, Bodine Printing Co., Michigan City, Ind. (Michiana Club) and O. B. Schwab, President, Lincoln Engravers, Inc., Ft. Wayne, Ind. (Fort Wayne Club) third from left, respectively are proud of the cups bestowed upon them by the International Association for excellence of their club's bulletins. Second from left is Alvin Friedrich, Vice President, Color Process Plate Co., Indianapolis, who is also Fifth District Representative and President of the Indianapolis Club. At right, J. Homer Winkler, Technical Advisor, Battelle Memorial Institute, Columbus, O., and newly elected President of the International Assocation.**



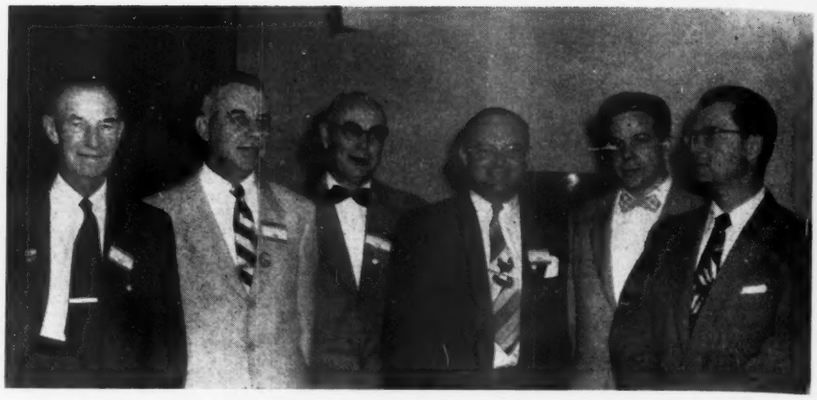
**Four in a Row.—Earl Bierbauer, Superintendent, The Baring Press, Detroit; Andy Chuka, The Printer, Phoenix, Ariz.; Edward T. Samuel, Printer, Cleveland, O.; J. Gus Liebenow, Chicago.**

With respect to offset sprays or powders he said "I find it very difficult for anyone to convince me that when I spray anything over an ink, with the exception of possibly the wax process, that I am adding anything to the lustre of the ink." He added: "Personally, I am of the belief that the hot wax spray such as was employed some time ago by the Curtis Pub. Co. is the solution of the problem."

He discussed the ensuing operations of cutting and scoring, or cutting and creasing in which heavy materials of a very firm nature are used to strip the cut box from the cutting die. He also discussed folding and gluing operations. Cartons are folded and glued at speeds ranging from 10 thousand to 100 thousand per hr. With gloss inks lying on the surface of the board in little particles like blisters of paint, the blisters are broken and cause streaks. In packaging filled cartons of various materials in corrugated cases, the cartons will rub against one another in shipping and will cause further blurring and streaking of the print. He then commented: "It is for this reason that smart operators will insist on scheduling, planning and designing work so that the subjects are printed flat, regardless of the number of colors, and then as a final finish, before cutting and creasing, to varnish."

Anticipating the raising of the question: If gloss inks penetrate, why doesn't varnish applied over flat inks penetrate? Mr. Liebenow said: "The answer is that when you have already applied flat printing inks to the sheet of boxboard you have sealed in the surface and prevented further penetration of ensuing colors, and finally, the varnish goes over several colors. This permits running a very fine film of varnish, and being transparent, it has no effect on the colors, but seals the sheet or subject. No marks will appear in folding and gluing or in subsequent shipping in corrugated cases."

In boxboard work, the speaker advised an 85 line halftone screen as the limit in fineness in a decent subject. If, however, the boxboard sheet is very thin, you may approach 100 line screen. Beyond that fineness a clouded or smudged subject will be obtained.



**These Craftsmen are among those who will assist the St. Louis Club entertain the 1952 convention of the International Association of Printing House Craftsmen—Left to right they are: William B. Chase, Secretary, St. Louis Club; Raymond C. Kuhl, Superintendent, Kutterer Jansen Printing Co.; Joseph A. Ottersbach, Composing Room Foreman, Buxton & Skinner; Herman Friebel; J. D. Rink, President, St. Louis Club of Printing House Craftsmen; Stuart Braznell, The Braznell Co., St. Louis, and General Chairman, 1952 Convention.**

Toward the end of this address, the speaker stated: "In the final analysis, a job printed in two colors in gloss ink runs up a greater cost on the production sheet than a job printed two colors flat with the extra or third impression in varnish."

### Foreman Training

John T. Pluhar, General Mgr., Maurice Leeser Co., Baltimore, and President of the Baltimore Craftsmen's Club, spoke on the Story of the Foreman-Management Course currently being sponsored by Printing Industry of America. In this foreman training program three phases are given prominence: (1) Job relations; (2) Job instructions, and (3) Job methods. He outlined each phase by giving the high points in instruction to foremen. To get cooperation and production from men, supervise them properly. He mentioned the various steps to be followed in treating employees. Give credit to an employee while the subject is "hot" when a good job has been done. Tell employees in advance when changes in routine are to be made—get them to accept the changed condition. Make the best use of an employee's abilities.

With respect to job instructions, Mr. Pluhar said: First, prepare the worker by putting him at ease and get him interested in learning the job. Tell, show and illustrate, one step at a time. Stress each key point. Then try out performance and have him explain each step to you. Make sure he understands. Then follow up. Put him on his own. Check frequently.

In job methods, break down the job to the worker by starting from scratch. After all, the ultimate objective is production. Take the job all apart. In teaching, discard all necessary details. Sell the new method to all departments.

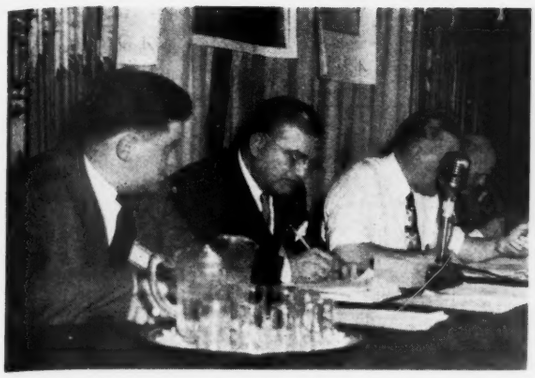
### Maximum Gold Lustre

Frank Gainsboro, President, Strathmore Press, Boston, was asked how to print gold on enamel stock to get more lustre. Mr. Gainsboro said maximum lustre could be obtained by using a kiss impression; the rollers should contact the form with a kiss impression; use a little more overprint varnish in the ink; run as much color as is practicable. If the design is all over the page, use two impressions. Bronze ink can be printed satisfactorily on Kromekote stock. When a job has been made ready when using gold ink, take off one sheet from the impression.

### Die-cutting Makeready

Basil M. Parsons, Secretary-Sales Mgr. for Thomson National Press Co., discussed *Die-cutting Makeready for the Average Printer*. Mr. Parsons stated that most printers do not take seriously proper makeready for die-cutting. He stressed that die-cutting makeready must be done on exactly the same principles as if the printer were preparing makeready for a fine printing job on a press in good mechanical condition. In one case, a printer purchased a used press in good running condition. The surfaces of the bed and platen were not perfectly parallel because the machine had been used a few years. The printer went ahead with a die-cutting job and after a few impressions discovered that one part of the sheet would cut through and the other would not. A competent man familiar with die-

**Offset Clinic Speakers' Panel**—Left to right, they are A. P. Reynolds, Printing-testing Laboratory, S. D. Warren Co.; Dr. Paul J. Hartsuch, Lithographic Consultant, IPI Div. of Interchemical Corporation; J. Tom Morgan, jr., General Mgr., Commercial Printers, Columbus, Ga.; Chairman Thomas P. Mahoney, Plant Mgr., Regensteiner Corporation, Chicago. (Photo courtesy IAPHC Public Relations Commission)



**Everything in Order at Boston Craftsmen's Nomination Meeting—(left to right) William Plummer, Ottawa, Can. Club, Teller; Dewey Reno, Western Newspaper Union, San Antonio, Tex., Teller; Pearl E. Oldt, Executive Secretary, Intl. Assoc. Printing House Craftsmen, served as Secretary of the meeting; at extreme right is Basil Parsons, Thomson-National Press Co., Franklin, Mass., who presided over the meeting.**

cutting was called in and showed this printer and his pressman. Parsons related that the printer was taught he must level up under that part of the form where he was not cutting all the way through and that he must put a spot sheet under the steel cutting plate to bring the makeready up for each low place just as carefully and conscientiously as he would do if he were printing and had some low places showing up on the first printed sheet. In other words, said Parsons, he must obtain a kiss impression.

Parsons summed up his discussion with the following points: (1) You must have good tools to work with if you are going to do die-cutting; (2) You must have a good press although not necessarily a new one; (3) You must have a good cutting die although not necessarily one that has not already been used; (4) If you have an old press and the impression is not level, use a level-up sheet and do a little patching first; (5) Then use a spotup sheet and bring up all the low places on this spotup sheet underneath the steel cutting plate; (6) Next, adjust press impression so the cutting knives won't drive into the cutting plate.

His final advice was: "Spend a little more time with proper makeready and you will be able to run a long job of die-cutting without the least bit of trouble—and don't forget that kiss impression."

## *Ink Clinic*

INTL. Treasurer Albert L. Kolb, Manager, Printing Dept., Marine Trust Co., Buffalo, N. Y., was chairman of a Monday afternoon clinic on gravure, aniline, letterpress and offset ink problems and developments. *Gravure Printing of Plastic Films* was the subject of the first speaker, I. M. Bernstein, Technical Director, Gotham Ink & Color Co. Bernstein declared that gravure platemaking has reached the point where it must look to direct photography on the cylinder itself rather than through the intermediary of the carbon tissue which it now employs. He noted, however, the progress already made by gravure printing in the packaging field.

The speaker related that the introduction of new plastic high plymeric films which possess specialized properties have constituted increased gravure problems to the printing ink manufacturer. He named the four most important general properties which the gravure printer should be concerned with in gravure inks. These were listed as printability, drying speed, adhesion and flexibility.

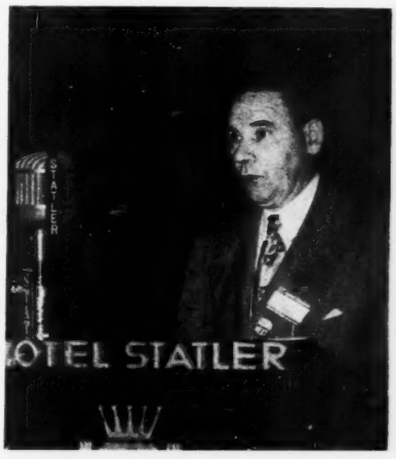
### Tone Value in Gravure

Printability, he said, is good ink transfer and a good approximation of the printed job compared to the copy with regard to color and finish characteristics. Tone value in conventional gravure is theoretically a function purely of cell depth, since the cells are all of the same size. He added that this was very seldom attained either on the very smoothest printing surfaces of paper or on the smoothest non-absorbent plastic films. Tone value instead depends partly on the depth of the cell and partly on white area admixture as in letterpress or offset tone reproduction. In printing solid areas, when the ink has either not been sufficiently thinned or when the ink is thixotropic the required flow out is not attained and screening results.

In reference to the drying speed of ink, Bernstein stated the ink must be correctly formulated as to solvency properties and solvent evaporation rate, in relation to the press speed and type of ink fountain employed. In the gravure printing of paper and cellophane, the printer should increase the temperature of the drying chamber or the volume of air passing through, or both.

### Inks Should Not "Bite"

He told Craftsmen the common idea that for adhesion to be effective it must be necessary for the ink to bite or dissolve into the surface, is not true. He said a good reason why, in gravure printing, one should not bite into the surface is that any introduction of an active solvent from the ink into the film being printed will cause some degree of stretch under printing tension. This should be avoided particularly in multicolor printing because of its effect on register. If the ink is correctly formulated, he added, adhesion will be good.

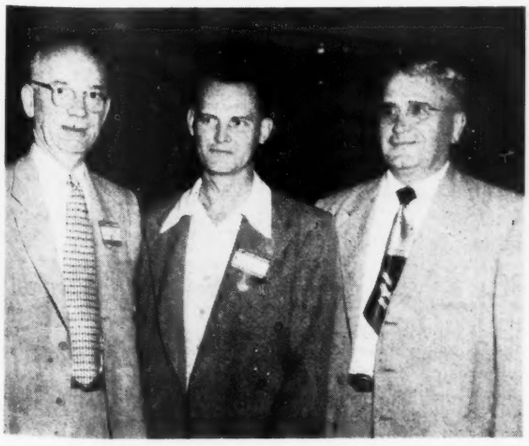



**Edward Stoehr, Chairman of Printing Week Celebration Committee, at August Boston convention of Intl. Assoc. of Printing House Craftsmen, discusses Printing Week celebrations held throughout country. He also handles the Printing Week Stamp Contest for which approx. 140 entries were submitted. Stoehr is production manager for The Meerow Press, New York, N. Y.**

Bernstein said the importance of flexibility of inks in the packaging field should be considered in embossing and when the wrapped finished package might receive rough handling. It is only in the case of poor cohesion between the pigment and the binder, such as that which may occur in gold inks, that one may experience poor flexibility in paper gravure printing. Flexibility of the printed ink is a function primarily of the plasticizer part of the ink formulation, although it is also a function of the specific properties of the resins and film-formers used in the formulation.

### Aniline Process Explained

A description and explanation of the aniline printing process was the next



**Snapped at the Craftsmen's Nominating Meeting, Hotel Statler, Boston, well after midnight, Tuesday, August 21— Fielding Utz, Milwaukee Printers Roller Co.; Royce Kent, Superintendent, Bemis Bros. Bag Co., St. Louis, Mo.; Elmer Leach, Leach Printery, Des Moines, Ia.**

feature on the program was presented by Douglas E. Tuttle, Manager, Aniline Ink Dept., International Printing Ink Div., Interchemical Corporation. He related that aniline presses range from a tiny unit used to print individual tooth pick wrappers to presses used for printing single repeats as large as 6 ft. by 10 ft.

In addition to continued expansion in the early field of grocery and specialty bag printing, Tuttle said the aniline process is now used to print, color, coat, or overprint a variety of items such as counter rolls, wrappers, gummed and pressure-sensitive tapes, plastic films, tubes, egg cartons, laundry boxes, milk bottle caps, corrugated paper, etc. A number of printers, he added, frequently run certain portions of a single job on aniline equipment and the balance of the same job on rotogravure equipment.

Some experienced and pioneering aniline printers have already begun to run tone-plates on a pretty nearly normal production basis, according to the speaker. Although the screens involved are usually limited to 85 line, finer screens have occasionally been printed with creditable results, he added.

### Wanted—Sheet-Fed Aniline Press

Tuttle criticized the lack in developing a sheet-fed aniline press. He noted, however, that a few sheet-fed letterpress machines, such as the small Harris P-2 blanker, in the envelope industry, have been converted to aniline presses, and as such, they have proved their value to owners.

In conclusion, he said that aniline printing is a natural for the printing of corrugated containers and other similar bulky materials. In this application, the average drying cycle required for the present conventional inks creates a real problem in the space required for storing large quantities of printed stock during the usual 4 or 5 hr. drying cycle. Aniline printed stock would, of course, require no drying-time storage at all, and could be overprinted, taped, and/or shipped immediately, he stated.

### Rubber Base Inks

*Progress and Developments in the Manufacture of Printing Inks* was the title of the next discussion led by Jack Mather, New England Mgr., George H. Morrill Co. Div., Sun Chemical Corp. Rubber-base halftone blacks, he said, have been developed which have corrected the earlier faults of this type of ink. The more recent rubber-base blacks will not fly on the press, color strength has improved, and offset both in the delivery pile and on the delivery tapes from carrying more ink to the improve the color has been eliminated.

Mather listed the advantages of rubber-base blacks as almost instant setting, unusual press stability, and exceptional color strength. A disadvantage of the ink is that it tends to body up on standing. Composition, not rubber, rollers must be used with the ink and it is not recommended for multicolor work.

### Non-Scratch Black Inks

No-scratch halftone blacks have been developed, he related, with greater hard-shell qualities than ever before. Rub-proof inks are being used in all colors in package printing. Their 180 deg. bends require ink films with elasticity, bonding, resistance to abrasion, and a certain degree of slip.

### Heat-set Inks

The development of heat-set inks, said Mather, has enabled magazine and book plants to reduce the time required to run an edition off the press and bring the news to the reader within a few days of its occurrence. While these inks were originally designed for high speed, they are, with slight modification, also widely used for slower work on sheet fed presses. On the latter, they are used without heat. Drying with the application of heat is claimed to be instant and complete, while 2 to 3 hrs. drying are required without it. The speaker said the advantages of this type of ink are elimination of first impression offset and of piling on pipe rolls and angle bars on web-fed rotaries, elimination of strike-through, and reduction to a minimum of show-through.

**Harold Crankshaw, Chairman of the Club bulletins Contest Committee, announces winners at the Boston Convention, Intl. Assoc. Printing House Craftsmen. Crankshaw is Printing Instructor, Washington, D. C., Public Schools.**

Heat-set gloss ink for gloss printing, according to Mather, eliminates the need for overprint varnish. While recently developed inks of this type do not have quite as much gloss as may be obtained by overprinting with varnish, he said, they do have enough so that in many instances this added operation may be eliminated with great savings to the printer. On slower sheet-fed presses, these inks are used without heat, resulting in reported pleasing finish, sparkling colors and the illusion of depth. They are now available for practically all types of color printing.

### Moisture-set Inks

Moisture-set inks, which dry by precipitation, are widely used in printing food containers and napkins. In many instances, the speaker explained, the normal moisture content of the paper or board is sufficient to accomplish drying. In addition to being practically odorless, these inks are also oilproof and greaseproof. Setting almost instantly, they may be run through waxing machines within 2 hrs. after printing. Moisture-set inks are also being used in printing kraft paper bags and corrugated cartons.

**In jovial mood, General Chairman A. Gordon Ruiter of Craftsmen's 32nd annual convention, Boston, August 19 to 22, accepts 10 gal. hat the gift of Andy Chuka, Phoenix, Arizona's irrepressible exponent for more water and finer horses.**

### High Speed Rotary Inks

The speaker revealed that suitable inks have been formulated for the new higher speed sheet-fed rotary presses. With such presses operating at speeds up to 5500 i.p.h. and with piles being run as high as 8000 to 10,000 sheets, inks had to be developed that would not fly, that would be stable and not dry on the press, but would still set fast enough to prevent any offset in the pile. It was also necessary to formulate ink so that the pressman could maintain his color strength without having to open the fountain a notch or two every hour.

### Urges Close Collaboration

Mather urged close collaboration between the printer and ink maker for overcoming problems arising from ink troubles. In order to select the right ink for the job, the printer should tell the ink maker the type of press and speed at which the job is to be run. He should furnish samples of the paper or stock to be used and samples of the colors desired if a new match is involved. He should tell the ink maker the kind of job to be printed. If it is to be multicolor work, he should know the sequence of colors to determine proper trapping. Advise him of any special properties required such

### Excellent Summary

INTERNATIONAL Second Vice President Gordon J. Holmquist of Los Angeles, presented a concise summary of the discussions carried on by panel members at the *Problem in Medium and Small Size Shops* clinic, during the recent Boston convention of the Intl. Assoc. of Printing House Craftsmen. The points brought out were as follows: (1) Always send out work with a dated order; (2) Complete written instructions with all shop orders; (3) We have learned that we can use the experts from manufacturer and supplier companies. A plant doesn't have to be big to consult with paper, ink and machinery representatives; (4) All plant executives should know their costs; (5) Key people should be educated with respect to their treatment of the customer and with the working force; (6) Courtesy on the phone is essential; (7) A plant should keep its promises; (8) There is important value in modern equipment and the printer should take care of it so it can be made to operate profitably; (9) We have learned that we can trust a man who is in love with his work.

as light-fastness; oil-, alcohol- or alkali-resistance, rub-proofness, etc., the speaker said.

#### Offset Driers and Compounds

Concluding speaker for the Ink Clinic was Dr. George Cramer, Director of Research, Sinclair & Valentine Co., who discussed improvements in driers and compounds for offset inks. Dr. Cramer conceded that drying speeds have now increased considerably with the ink maker striving to keep pace and improve drying conditions.

He stated that a lithographic ink has been formulated that will dry in 1 hr. To compete against high speed letterpress printing, ink makers have abandoned inks that dry by oxidation.

The speaker reminded Craftsmen that when compounds are added to the ink they will retard drying, reduce tack, etc. He advocated that the ink maker should be consulted when special problems arise in printing a particular job.

Joseph J. Green of the Leigh Valley (Pa.) Craftsmen's Club said his plant was using a high-gloss ink on a two-color job which produced a mottle effect and a halo around the two-color portion of the job. In solving such a condition, Dr. Cramer suggested that perhaps some compound should be used to take the tack out of the ink. He said that sometimes this compound should be added to the first color. The compound, itself, would depend on the type of job being run.

A member of the Toronto (Can.) Craftsmen's Club wanted to know if anything could be done to change the color of the ink from wet to dry. Dr. Cramer replied that a synthetic varnish could be added.

### Education in "Library"

While addressing the Problem Solutions Clinic, at the August Convention of the Intl. Assoc. of Printing House Craftsmen, Hotel Statler, Boston, Speaker J. Gus Liebenow related he took his first job with Ed Ryan, now Manager of the Lackawanna Press, Newark, N. J. During his apprenticeship days he said that if any employee of the plant was seen going to the "library" with a trade magazine under his arm during working hours it was perfectly OK with Ryan. Liebenow didn't say what happened if the employee didn't carry a magazine with him to the "library."

## *Club Management*

PRESIDING officer at the Club Management Dinner on Monday night was Intl. Public Relations Commission Chairman Amadeo Tommasini. Manager, University of California Press, Berkeley, Calif. In his introduction, Tommasini commended the Craftsman clubs for the improvement in quality of club bulletins.

*Club Business Administration* was the subject of a talk delivered by Deputy Second District Representative Henry A. Schneider, Production Mgr., Editorial Development Div., Charles Francis Press, Inc., New York. Schneider explained how finances and financial records are handled by the New York Craftsmen's Club.

The President of the Milwaukee–Racine Club Earl S. Ellis, Sales Mgr., Western Envelope Co., told the assembled Craftsmen that the Milwaukee-Racine Club relies on the high standards of its activities to draw new members. Ellis, who spoke on *The Procurement and Retention of Members*, related that out of an attendance of 310 in the Milwaukee-Racine Club, average attendance at monthly meetings is 180. The speaker dwelled upon his Club's requisites for Craftsman membership, the quality of the educational meetings, and the procedure followed after new members have been accepted.

#### Bulletin Contest Awards

Awards in the annual club bulletin contest were made by Club Bulletin Contest Chairman Harold G. Crankshaw, Printing Instructor, Washington, D. C., Public School System. First place for Craftsmen bulletins from Clubs having a membership of over 150 was awarded to Honolulu; second place, San Francisco; and a tie for third place between the Chicago and Milwaukee-Racine clubs. Other Clubs in this category receiving honorable mention were New York, Atlanta, Baltimore, Los Angeles and Philadelphia.

First place for Craftsmen bulletins from Clubs having a membership of under 150 was awarded to Utica, N. Y.; second place, Ft. Wayne, Ind.; and third place, Michiana (South Bend, Ind.). Other Clubs receiving honorable mention awards in this category were Lehigh Valley, Pa.; Cape Town, South Africa; Toledo, O.; San Antonio, Tex.; and Grand Rapids, Mich.

#### Stamp Contest Awards

Awards in the printing week stamp contest were presented by Intl. Printing Week Committee Chairman Edward W. Stoehr, Production Mgr., The Meeeow Press, New York. First award out of the 140 designs submitted went to Ralph Marchese, Newark (N. J.) Club; second place, Emil G. Sahlin, Buffalo (N. Y.) Club; and third place, Eric R. Poulson, Montreal (Can.) Club. Entries from Craftsmen affiliated with the Baltimore, Chicago and San Francisco Clubs were among the seven receiving honorable mention certificates.

## *Medium and Small Shop Problems*

ONE of the three clinics held simultaneously on Tuesday afternoon, August 21 was related to discussion of Problems in Medium and Small Size Shops. Intl. Second Vice President Gordon J. Holmquist was scheduled as chairman of the meeting, but he called upon George Marsh, Boston designer of printing, to preside.

George Marsh, Designer of Printing; Albin R. Johnson, jr., Sales Representative, Tileston & Hollingsworth Co.; Kenneth J. Draper, President, Charles A. Draper Co., Inc., William J. McFarlin, jr., Sales Manager, Daniels Printing Co., Inc.; John W. Power, jr., Sales Representative, International Printing Ink Co.; Addis W. Dempsey, Vice President, Donovan & Sullivan Engraving Co., Inc.; Frank Lightbrown, Vice President, Cecil H. Wrightson, Inc.; Henry G. Hanson, Proprietor, The Hanson Print; Andrew H. Murphy, Superintendent, Libbie Printing Co., Inc.; Carl A. Nelson, Sales Representative, American Type Foundersk Inc.; Frank Gainsboro, President, Strathmore Press, Inc.; Millard D. Taylor, Assistant Director of Typography, Rand-Avery-Gordon Taylor, Inc.; John P. Pow, Proprietor, John P. Pow Co.;

Patrick J. Smith, Coordinator for 22 years, Beacon Printing Ink Co.; Ernest Rapa, Production Manager, Sutherland-Abbott Agency; Hector MacDonald, Proprietor, Bay State Bindery; Robert Pannier, Sales Representative, New England Electrotype Co.

All of the speakers led off with helpful suggestions about problems which seemed to be common in the case of the small or medium printing plant. Some of the speakers were printing in-plant managers, some managers of houses supplying the plants with type composition, photoengravings, electrotypes, and binding services. The balance of the panel was made up of printing equipment and supplies representatives. The makeup of the panel was as follows:

### Complete Details

William J. McFarlin, jr., Sales Mgr., Daniels Printing Co., Inc., stressed the importance of getting the right story about the job through the salesman from the customer. It is possible for those concerned to pass ideas and details to the production departments. In these days of high labor rates considerable expense is involved because of this lack of complete information. Instead of making a new dummy for the production departments, perhaps several proofs each marked by different people concerned in the job will be given the production departments with the result that mistakes occur. The remedy is to instruct the plant executive to refuse to accept the dummy unless it is complete with all details pertaining to the job.

Another problem is the job envelope which is sent through without having been filled in with all details to the point where it may seem monotonous.

The next problem is to get the people concerned to read the instruction sheet.

When a salesman brings in a request to the estimator, the specifications should be completely filled in on a specification sheet. Pads of these sheets can be given to customers so they can be used also by the customer when getting estimates from the printer's competitor. When the printer gets one of these sheets from a customer every detail has been entered and the printer knows he is estimating a job exactly on the same basis as his competitor.

### Eliminate Word Rush

Frank Lightbown, Vice President of Cecil H. Wrightson, Inc., stated he heartily agreed with McFarlin with respect to having a plan for controlling job specifications. He disagreed with him, however, with respect to the word Rush. He advocated that the salesman or plant executive should be specific as to the time when the job is to be delivered—just specify the date. He stated not enough effort is made to stress the importance of saving time in plant operation. He stressed the necessity for training capable substitutes as a means for preventing heart trouble. The average plant executive does not stress to his employees the importance of productive time in the plant. Everybody concerned should be more conscious of costs.

### Outstanding Information Booklet For Uninitiated

AN outstanding booklet is the one entitled *The International Association of Printing House Craftsmen, Inc.—What It Is, What It Does, What You Get From It.* Copies were distributed to Craftsmen at the August Boston convention. The booklet contains 36 pages with cover, 5½ in. by 8½ in. size.

It is designed to furnish complete information about the International Association and we believe its authors have succeeded in that objective. Covered are all activities of the International and those of local Clubs, how the parent organization and the local club can help printing plant executives in their profession and the services afforded to local Clubs and individual members.

The authors have confined themselves to simple English and as such the text is easily read. Length of text is brief and can be consumed in one sitting. One of the pages is devoted to *Your Membership in the Craftsman's Club Offers These Advantages*—Valuable technical information; exchange of information between Craftsmen; industrial fraternalism; progress and promotion (benefits received by participating in Club activities, and good fellowship.

Copy preparation and design jointly by J. Homer Winkler and Amadeo R. Tommasini.

### More than One Paper Source

Albin R. Johnson, jr., Sales Representative, Tileston & Hollingsworth Co., said that through experience his firm has proved that a firm which caters to only one source of paper supply has its troubles. No one company in these times can supply a completely diversified line. The average printing plant should select two or three reputable houses with which to do business. He advocated taking the sales representative into your confidence and take advantage of service afforded on paper problems.

### Complete Instructions

Addis Dempsey, Vice President of Donovan & Sullivan Engraving Co., Inc., said instructions to photoengravers should be complete. It is preferable that the dummy for the job should be handed to the engraver to enable him to work to better advantage. The engraver should be one in whom the buyer has confidence. Confidence should be mutual. Estimates can mean that the firm making the highest estimate is the best firm from whom to buy. Plates may contain 20c worth of copper or 10c worth of zinc, but they will not reach their worn-out point for a long time. The photoengraving should be suited to the paper—that's where the engraver can work with you.

### Consult Electrotyper

Robert Pannier, Sales Representative, New England Electrotype Co., said all plant executives should review ways and means for saving money in plant operation. It is always advisable to consult the electrotyper when estimating a job. Among other statements, he said the electrotyper generally can make up a combination halftone and line form cheaper than can the engraver. In one instance, after the electrotyper's advice had been followed, one printer used unmounted plates on patent base. The time saved on the press allowed the printer to run two additional forms per week. In borderline cases, it is well to make the job all over when plates commence to show wear.

### Cost Finding

One of the panel members discussed the advisability of small plants maintaining a cost finding system. A few of his remarks were that all of the small plants have a bookkeeping system. The small shop executive's wife operates the home on a budget, but the husband does not do so in his business. He keeps track of the income and the outgo and hopes to have a profit. A basic cost finding system tells you when to buy presses and when not to buy them—it's a tool of management. Fundamentals of such a system are applicable to the large and the small plant. One of the systems recommended is that sponsored by the Printing Industry of America. "Keeping up with the Joneses" with respect to buying new presses is not advisable. The industry is becoming more and more a manufacturing industry even though it is a custom-made business. He mentioned a statistic which conveyed the information that 75% of printers in the Boston area operate without a cost-finding system. He discussed a period in which a group of printers undertook to operate a cost-finding system but after a time gave it up. Apparently, they gave up the idea because of the cost of maintenance.

### Depreciation—Obsolescence

John P. Pow, Proprietor, John P. Pow Co., Printer, discussed at some length depreciation and obsolescence of printing equipment, both of which every printer should take into consideration for the healthy operation of his plant. Depreciation of equipment should show a loss distributed gradually over all jobs. However, it is impossible to apply a single flat rate to all machinery because its

operating life varies. He explained in some detail the method of handling depreciation. A machine may suddenly lose value because of a new competitive development. This is called obsolescence. It is a mistake to write off larger amounts when business is good and lesser amounts when business is poor.

### Refresher Course

Henry G. Hanson, Proprietor, The Hanson Print, praised the manufacturer and supplier representatives because they have the latest information about how to do things at their fingertips. He explained a constructive suggestion whereby the supply houses could get together and pick out one or more competent speakers from their number to deliver a series of lectures to printing plant executives. Printing executives should spend a little time outside their working hours learning new ways and means for doing things. In some industries this is a requirement, but not in the printing industry. In-plant executives should be required to take refresher courses periodically. He urged Craftsmen's Clubs to sponsor intensive refresher courses in engraving, electrotyping paper, ink, etc.

### Shop Human Relations

Frank Gainsboro, President, Strathmore Press, Inc., Boston, explained that in his plant there are 16 or 18 employees. It is his belief with respect to the human relations angle between employer and employee that the employer should treat his employee as he (the employer) would like to be treated. Among other suggestions, he said when the employer comes into the plant in the morning he should say "Hello" to all employees. In small and medium size plants he should roll up his sleeves and participate in the working operations. By showing an interest in employees and encouraging them to do their best, quality is put into the work. His creed is that the employee should give part of himself to the customer. The man who loves his work is to be trusted.

### Confide in Ink Maker

John Power, jr., Sales Representative, International Printing Ink Co., discussed the relationship of the printer and the ink maker. When ink is ordered, the ink maker needs full details about the job. Give him 15 or 20 sheets of the stock upon which the job is to be printed; furnish information about time lapse between printings; tell the ink maker whether or not the job is one which will be exposed to strong light so he can use permanent pigments that won't fade in extreme like. In this way he can furnish the right kind of ink for the purpose.

For the printer, he advised the building of a file of color proofs so that, if possible, the printer can sell the customer on his colors—he will like them better than these of the ink maker.

In requesting color matches, furnish samples of the stock to be used. It is desirable that the ink maker be given a chance to become acquainted with the type of equipment used by the printer.

No ink maker wants to sell you any more ink than you need.

### Credit With the Banker

Kenneth A. Draper, President, Charles A. Draper Co., Inc., discussed the relationship of printers and bankers. He related how, in one instance, he built up credit with a bank. He asserted bankers are interested only in ability of the printer to pay back.

Why some printers go around to auction sales to buy junk is beyond his understanding. For his part, he said he would purchase only new, up-to-date equipment.

### Don't Get Wrench-happy

Carl A. Nelson, Sales Representative, American Type Founders, Inc., said he likes to feel the printing equipment salesman is a counselor. Most manufacturers try to hire sales representatives who have had in-plant experience. A competent salesman is capable of analyzing the printer's requirements when new equipment is contemplated and is in a position to advise the purchaser whether or not the equipment he has in mind will be a

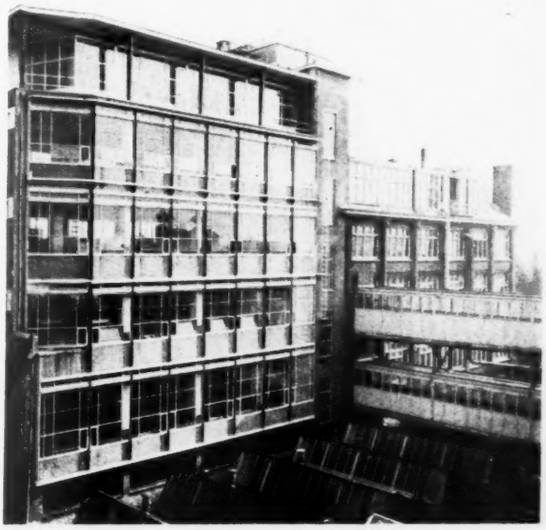
(*Continued on Page 59*)

Burton S. Hanson, Secretary and General Sales Mgr. of The Challenge Machinery Co., has retired after 53 years of service with the firm. He is also resigning from the directorship of the National Printing Equipment Assoc., an office he has held for five years. Hanson plans to make his home in Grand Haven, Mich., and spend the winters in Florida during his retirement.

Ray C. Cook has joined the Western Newspaper Union as Manager of its St. Louis Div. He formerly was sales director of the Printers' Equipment Div., Hamilton Mfg. Co. Cook had served 35 years with WNU prior to joining the Hamilton firm in 1948. According to W. W. Brown, WNU Vice President and General Mgr., Cook succeeds W. S. Gordon who has been transferred to the company's Washington office.

## NSC Manual

Practical ways to prevent industrial accidents and fires are contained in the new edition of the National Safety Council's 800 page *Accident Prevention Manual for Industrial Operations*. This second edition of the manual contains 256 more pages and 11 more sections than the first. Subjects covered include permanent structure and plant layout; maintenance and maintenance crews; boilers; pressure vessels; machine guards; materials handling hazards; flammable liquids; fire prevention; fire control; personal protective equipment; and industrial health engineering. Also industrial poisons; medical services in industry; safety organization and training; and accident records, analysis and costs. A detailed description and price may be obtained by writing the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.



**Amsterdam's 100th Year**—Typefoundry Amsterdam of Amsterdam, Holland, parent firm of Amsterdam Continental Types and Graphic Equipment Inc., is celebrating its 100th year of continuous operation. Shown here is the company's plant where 500 thousand matrices are used to manufacture types in 30 different languages. Among the Graphic Arts equipment manufactured by the firm are included the Rolca ticket press, S & S offset proofing press and the Autovertical automatic focusing vertical camera. Karel van der Eynden is Manager of Amsterdam Continental with headquarters in New York. According to Anthony van der Tuuk, President of Amsterdam Continental and Managing Director of Typefoundry Amsterdam, a limited edition of the history of the printing type has been prepared to commemorate the firm's centennial. A limited number of the special edition, which is not for sale, will be presented to friends of Typefoundry Amsterdam in this country.

# NPA
## Printing and Publishing Division

### Printing Plates

Direction 1 to CMP Reg. 5, issued August 3, establishes for the printing industry a definite procedure for obtaining printing plates. The direction provides that printing plates and copper anodes used in printing shall constitute operating supplies to the owner of the plates or copper anodes, whether such owner is an advertiser, advertising agency, publisher or printer. Printing plates shall be treated as an operating supply as to the ultimate owner under CMP Reg. 5 regardless of whether, under that particular owner's accounting practice, such plates are charged to operating expense and regardless of who uses such plates.

Such plates shall be charged against the MRO quota of the owner, who may, in computing his quota base, include the amount he spent for plates during the base period. The person who orders a printing plate may apply the DO-MRO rating of the person for whose account the plate is ordered.

Printing plates are not to be considered operating supplies by engravers, electrotypers, stereotypers, lithographic platemakers, or other manufacturers of printing plates, and these companies may not use a DO-MRO rating to obtain them. Companies who grind, polish, plate or coat controlled materials for manufacturers of printing plates must file an application for allotments on Form CMP-4B. Printing plates, as defined in Dir. 1, means any kind or shape of printing or marking plate, cylinder, or other form used in printing, whether an original or a duplicate, except in roller, screen, or block printing by the textile industry.

### Who Files CMP-4B

Because of the confusion in the Graphic Arts industry surrounding the filing of CMP Form 4-B, the National Production Authority has clarified some of the applications of this order in the industry. Printers and lithographers who manufacture their own aluminum or bronze ink, or use bronze powder for dusting, must file CMP-4B with the NPA Chemical Div. if they use more than 500 lbs. of either material in a calendar quarter. If they use less than this amount, they are authorized by NPA to apply an SU (Small User) to the purchase orders without having to file the CMP form.

If a printer or lithographer buys aluminum or bronze ink from an ink maker, he is not required to file CMP-4B. This is true again, even though the bronze ink is supplied in two separate containers, one holding the powder and the other the ink vehicle or varnish.

Manufacturers of loose leaf binders are not required to file this form unless they buy steel, copper or aluminum in controlled material form to make metal parts for the binders. If the metal parts are made by another manufacturer, it is the other manufacturer who has to file.

Any printer or lithographer who uses more than 500 lbs. of aluminum foil in a calendar quarter has to file CMP-4B. Electrotypers, stereotypers or gravure printers need not file Form 4-B for copper anodes which are used in printing processes and have been covered in previous MRO instructions.

Printing plates containing copper, aluminum or steel are not controlled material, and neither the platemaker or user of them has to file a Form CMP-4B. The form is filed instead by the company which makes the engravers' plate or the litho sheet. Neither the lithographic supply house nor the lithographer who grains his own plates has to file because the plate he grains has been processed beyond the controlled material stage.

Companies that manufacture or process controlled materials (copper, aluminum, and steel sheet) which are later made into printing plates are required to file CMP Form 4-B to get material allotments, according to the National Production Authority. NPA said it had received a number of queries from the industry regarding the filing of the forms because the industry had not previously been required to file.

NPA explained that the form must be filed by any company which buys copper, aluminum or steel in unground and unpolished sheet form and grinds or polishes, plates or coats it for use by the printing industry. No company need file CMP 4-B unless it gets the metal in unground and unpolished form and completes the preparation process. The forms must be filed directly with the NPA Printing and Publishing Div., Washington, D. C. The forms and further information may be obtained at Dept. of Commerce field offices.

### Continuous Forms Parley

A shortage of registered bond paper is preventing manufacturers of continuous forms from filling Government orders, industry representatives told a recent NPA conference. NPA officials said the agency will assist them in acquiring paper stocks to meet Government demands, if necessary, and will ask Federal procurement offices to submit alternate specifications if original orders for the webbed paper forms cannot be met. An order requiring continuous form manufacturers to set aside a fixed percentage of output for defense rated (DO) orders is under consideration, NPA said.

### Electroplating Meeting

Committee members of the Electroplating Industry reported that electroplating facilities are believed adequate and certificates of necessity for rapid tax amortization should not be granted for expansion or construction of electroplating plants. The committee also said that any further reduction in the availability of copper will seriously handicap the industry.

### Must Fill CMP Orders

To eliminate certain improper scheduling methods currently followed by some controlled materials producers, the National Production Authority recently amended the language of CMP Reg. 1. The amendment makes it unmistakably clear that a mill may not accept an authorized controlled material order if it cannot be filled during the calendar quarter for which it is valid, unless it is revalidated for a subsequent quarter.

CMP Reg. 1 states that a controlled material producer who is not required or is unable to accept an order for delivery in the month specified by his customer, but has open spaces on his schedule during the next two months, must accept the order and fill it as soon as possible, if this is satisfactory to the customer.

The amendment emphasizes, however, that if this would mean delaying delivery (from the third to the fourth quarter, for example) the order may be accepted only if the customer certifies that he holds an allotment valid for the fourth quarter. In such cases, the customer must charge the delivery to his fourth quarter allotment.

### Machinery Resellers

Resellers of machinery and related goods are permitted their traditional percentage markups over cost under a new regulation issued recently by the Office of Price Stabilization. The order is Ceiling Price Reg. 67 and was effective August 27, 1951.

A method for automatic adjustment of ceiling prices of resellers to reflect cost changes in commodities they sell is a logical sequel to CPR 30 which will cause both upward and downward moves in manufacturers' prices for machinery and related goods, OPS said. Under the recent order, for a commodity with a manufacturer's published list price, the reseller deducts the discount, if any, or adds the percentage markup during the last pre-Korean calendar quarter, April 1 to June 24, 1950. The result is his new ceiling price.

If he did not use a price list, a reseller determines his new ceiling by adding the percentage markup used in the same quarter to his current legal cost. When a reseller cannot use either method, he applies to OPS for a ceiling price.

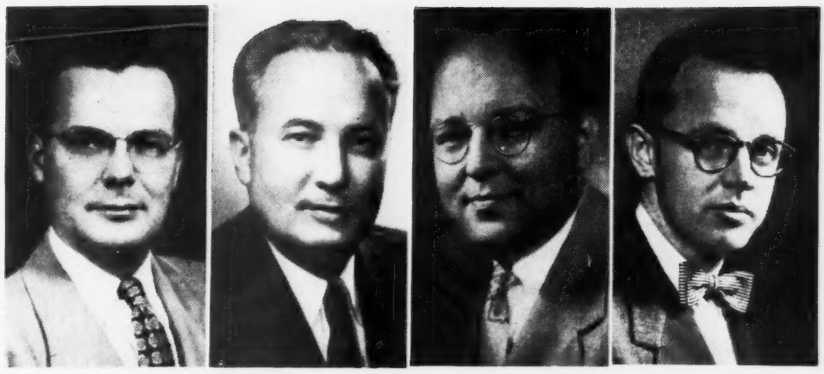
### Limits MRO Purchases

During the first month of any calendar quarter, you may not order or receive more than 40 percent of your quarterly quota of maintenance, repair and operating supplies, under Amendment 1 to CMP Reg. 5. An example of this appeared in the August 17 number of Printing Industry of America's *Management Reports* as follows: if your quarterly quota is $12,000 (which you arrived at by taking 30 per cent of your total expenditures of $40,000 for the year 1950, the base period for computing your quota), then you cannot order or receive more than 40 per cent of $12,000 or $4,800 worth of maintenance, repair and operating supplies during the first month.

# EXECUTIVE Cs

At a recent meeting of the Directors of Wood Newspaper Machinery Corp., Nelson Maynard was elected Chairman of the Board and chief executive officer of the Corporation. Ogden B. Hewitt was elected Chairman of the Executive Committee. Maynard joined the Autoplate Co. of America, predecessor of the Wood firm, in 1912. He was made a Director in 1918 and chairman of the executive committee in 1937. The Directors voted to continue the present Management Committee which consists of: I. Tornberg, Vice President in Charge of Sales; P. L. Tollison, Vice President in Charge of Research and Development; R. G. Griffoul, Vice President in Charge of Manufacturing; Kirk McFarlin, Treasurer; and William A. Silence, Assistant Secretary.

Louis A. Lara has been named General Sales Mgr. of the Ink Div. of J. M. Huber Corp., according to J. S. Hart, Vice President. Lara joined Huber in 1933 as export manager and in 1949 became assistant general manager. He will continue to make his headquarters at the Brooklyn, N. Y., plant. Hart also announced that Edward Schirmer, who joined Huber in 1946, had been named Asst. General Sales Mgr. Raymond E. Weltz succeeds Schirmer as Technical and Sales Service Mgr. Weltz was with the Container Corp. of America prior to coming with Huber in 1948.

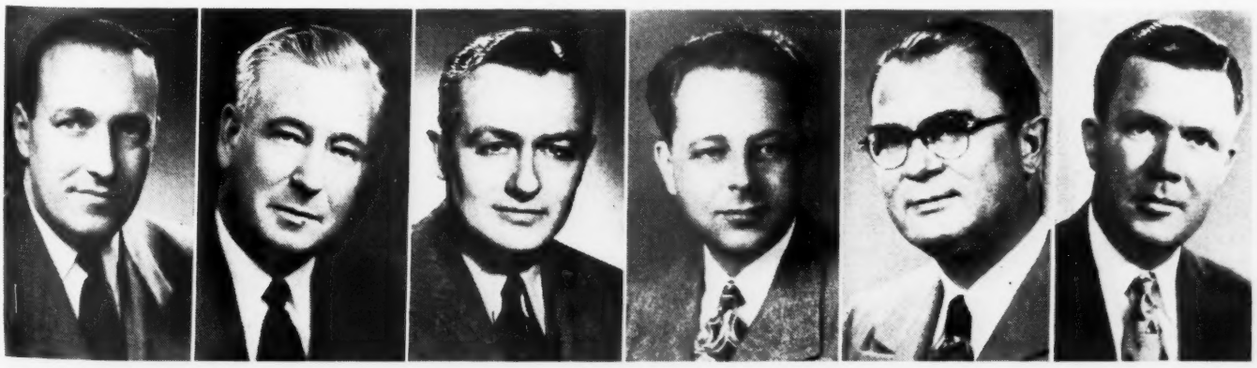


A shift of Linotype sales personnel through three promotions and a transfer has been announced by Harry W. Porte, Vice President in Charge of Sales, Mergenthaler Linotype Co. The shift involves Fred B. Asdel, jr. (left), manager of Linotype's Pacific Coast Agency, who will become Assistant Director of Sales in the Company's home office in Brooklyn, N. Y.; E. Rene Leach (second from left), manager of the Chicago Agency, who will transfer to the West Coast to assume Asdel's duties as Manager; Briant W. Patterson (second from right), manager and a Vice President of Canadian Linotype, Ltd., who takes over as Manager in Chicago, and Paul S. Chisholm (right), who has succeeded Patterson as Manager and Vice President of Canadian Linotype, Toronto. Asdel joined the Linotype company as a production engineer, was appointed to the position of manager of the New York Agency, and subsequently was named Pacific Coast Agency Manager. Leach joined the Pacific Coast Agency in 1930 and was appointed assistant manager in 1935. Patterson, a graduate of Dartmouth College, worked in various capacities for Rogers, Kellogg & Stillson, Inc., New York, before joining Mergenthaler Linotype in 1939. Chisholm became associated with the Linotype firm in 1945 and spent several years as a production engineer covering Kentucky and adjacent states.

Glenn Sensiba, General Mgr. of the Sigmund Ullman Co., Midwest Div. of Sun Chemical Corp., died on August 18 after a long illness. Mr. Sensiba was also a director of Kable Printing Co. of Mt. Morris, Ill. He was associated with the Sigmund Ullman firm for 45 years.

Lee Augustine, Vice President of the Printing Machinery Co., was recently elected President of the newly organized Printers Supplymen's Guild of Cincinnati. Other officers elected were: First Vice President, Ken Cramer, Ideal Roller & Mfg. Co.; Second Vice President, W. H. Hammett, Miehle Printing Press & Mfg. Co.; and Secretary-Treasurer, George A. Vitt, Wortman Roller Co. Serving on the Board of Governors besides the officers are Louis A. Croplis, American Type Founders; Harold Blacker, H. Blacker Printing Inks, Inc.; Jack Dougherty, Roberts and Porter, Inc.; Verne Crane, Sam'l. Bingham's Son Mfg. Co.; and Alfred Lamson, G. C. Dom Supply Co.

Thomas Roy Jones, President of Daystrom, Incorporated, has been designated the 1951 winner of the Henry Laurence Gantt medal for "distinguished achievement in industrial management as a service to the community," it was announced recently by The American Society of Mechanical Engineers. Presentation of the award, given annually to an outstanding American industrialist, will be made November 28 at the Society's annual meeting at Atlantic City, N. J.



Creation of six new districts affecting 17 northeastern states was announced recently by Ren R. Perry, General Sales Mgr., Harris-Seybold Co., in a realignment of the company's sales and service organization. Six district managers were also named by Perry, as the company's Eastern and Central Districts were divided into six smaller units. The districts and their managers are as follows: New York District, Theodore M. Broadston (extreme left), 380 Second Ave., New York 10; North East District, Joseph C. Doty (second from left), Rm. 423, Rice Bldg., 10 High St., Boston 10; Philadelphia District, Ralph H. Randall (third from left), 20th and Chestnut, Philadelphia; Washington, D. C. District, Paul F. Schafer (fourth from left), 418 DuPont Circle Bldg., Washington 6, D. C.; Home Office District, John M. Morehouse (fifth from left), 1200 Keith Bldg., Cleveland 15; and Central District, Robert T. Cookingham (extreme right), 1200 Keith Bldg., Cleveland 15.

E. Paul Babcock (shown here) was elected Secretary and Sales Mgr. of The Challenge Machinery Co., and R. C. Gould was named a Director, at a recent meeting of the board, it has been announced by J. Edgar Lee, President. Babcock, formerly assistant sales manager, succeeds Burton S. Hanson who resigned recently after 53 years of service with the firm. Gould is the company's Traffic Mgr. and has been with Challenge since his return from service in the Coast Guard during World War II.

M. Hugo Lindberg, Eastern Mgr. of The Printing Machinery Co., was honored recently at a cocktail party given on the occasion of his 70th birthday anniversary. The party, held during the Intl. Craftsmen's Convention in Boston, was given by David W. Schulkind, President of the E. P. Lawson Co.

Ronald Savery has joined Colton Press, Inc., New York, in an executive capacity according to an announcement by Leo H. Joachim, head of the firm. Savery continues as managing editor of *Printing News*, with which he has been associated since 1948, and will also serve as associate editor of *Graphic Arts Production Yearbook*. He has resigned as eastern editor of *The Inland Printer*. From 1944 to 1946, he served as editor of *Bookbinding & Book Production*.

**Bensing Bros. & Deeney have appointed Norman H. Cooper (left) as Sales Mgr. and Joseph H. Gillen (right) as Purchasing Agent. They will make their headquarters at the company's home office in Philadelphia. Cooper joined the company in 1939 as a chemical engineer and has served in its technical sales and service department. He is a graduate of Northeastern University. Gillen, who has been with BBD since 1938, formerly was superintendent of aniline ink production in the Philadelphia plant. He is a veteran of World War II.**

Carl (Bud) Daniel Proctor died suddenly on August 20 at Grand Haven, Mich., where he had been serving as Sales Supervisor for The Challenge Machinery Co. He was 61 years old and had suffered several heart attacks during the past year. Mr. Proctor joined Challenge in 1950 following a brief retirement from the position of vice president and sales manager for American Type Founders, Inc. He was also general promotion manager of American Sales Book Co., Niagara Falls, N. Y. He was a veteran of World War I, having served with the U. S. Marines.

This year, Roy C. Dubbs (shown above at the Monotype keyboard) completes 39 years of continuous service as a Monotype Operator with the Record Press, Inc., St. Augustine, Fla. Dubbs was tendered a party recently by his fellow employees to celebrate both his birthday and in recognition of the longest record of service of any employee with the company.

Wayne V. Harsha has succeeded J. L. Frazier as Editor of *The Inland Printer*. Frazier, who has retired, remains on *The Inland Printer's* staff as Consulting Editor. Harsha, former professor of journalism at Ohio State University, has served as advisor to student publications at that college for 12 years. He also recently was executive secretary of the Ohio College Newspaper Assoc. From 1928 to 1932, he was managing editor of *United States Publisher and Printer*, and later served in a similar capacity with the *National Printer Journalist* and *Printing Industry* magazines. He also has served as assistant plant superintendent of the Williamson Printing and Publishing Co., Springfield, Ill.

Frazier has been associated with *The Inland Printer* in various capacities for 37 years. He is author of the books *Type Lore* and *Modern Type Display* and was earlier identified with several Kansas newspapers, both as a printer and in editorial capacities. He is well and favorably known to just about everybody in the Graphic Arts. For years, he has maintained a reputation as an authority on typography. He was the original founder of a select group of typographers called Typocrafters. Frazier's career has been one of great activity.

Oscar Roesen, President of Wood Newspaper Machinery Corp., passed away suddenly on July 28, victim of a heart attack. Born 63 years ago in New York, Mr. Roesen graduated from Stevens Institute of Technology in 1912. He was associated with the engineering department of R. Hoe & Co. until 1926. At that time he joined the Wood organization as sales manager, becoming vice president in 1930 and elected president in 1935. He was also Vice President and a Director of the Wood Flong Corp. At a special meeting of the Directors of the Wood Newspaper Machinery Corp., resolutions of condolence addressed to Mrs. Rosen were passed. These resolutions will be appropriately engrossed and presented to Mrs. Roesen.

Milan F. Dudeff was recently elected Vice President in Charge of Sales and Engineering of the Charles Beck Machine Corp., according to an announcement by the Board of Directors of the firm. Dudeff was also appointed Treasurer of the company by the directors. He previously served for several years as manager of sales and engineering for Beck. Henry E. Scherer was installed as Secretary by the Board of Directors. Carl A. Beck and Richard H. Beck continue as President and First Vice President respectively of the company.

At the recently held Seventh Intl. Congress of Master Printers in Church House, Westminster, London, Eng., H. Franklin Shedd (right), the only person present from the United States, presented to Ernst Kulling, Managing Director of the Swedish Federation of Master Printers, and to Gosta E. Carlsson (left), Research Director of the Graphic Arts Research Laboratory of Sweden, certificates of membership in Beta Alpha Gamma, the honorary management engineering society of the Graphic Arts. Shedd is President of Shedd-Brown Mfg. Co. and also President of Graphic Arts Industry, Inc.

# Streamlined Production

***Achieved in new plant of South Bend (Ind.) Tribune through executive ideas, modern equipment and liberal use of conveyor principle together with maintenance simplification methods.***

THE 79-year-old South Bend (Ind.) *Tribune* recently completed its million dollar expansion and plant improvement program. Since readers of *Printing Equipment Engineer* primarily are interested in production and mechanical equipment and methods, we will not dwell upon the business, editorial, advertising or circulation departments of this prosperous Indiana daily.

One of the features of the *Tribune* plant is the generous amount of new equipment provided the mechanical departments for fast and improved newspaper production. The outstanding feature from the production standpoint is that maximum use has been made of conveyor equipment. Mechanical operations have been streamlined as much as possible. Putting printing industry production on wheels, as in the auto industry, has been a major objective of a number of printing engineers like Robert Royden Greer, Robert W. Dickerson and Howard Jampol.

Secretary - Treasurer Franklin D. Schurz, in commenting upon the installation of the conveyor equipment in the *Tribune* plant, said: "We have utilized the conveyor principle throughout the building as much as possible, not only to speed up and simplify manufacturing operations, but also to eliminate worker fatigue."

F. A. MILLER, President and Editor — F. D. SCHURZ, Secretary-Treasurer
South Bend (Ind.) *Tribune*

The two-year building and improvement program was realized under the direct supervision of Fred A. Miller (83 years of age), President and Editor of the South Bend *Tribune*. Mr. Miller was assisted by Secretary-Treasurer Franklin D. Schurz. Mr. Miller related that the paper began as a weekly in 1872 and was converted into a daily in 1873. The paper has never missed an issue. Circulation of the paper is in excess of 100 thousand copies daily. Miller has been president of the *Tribune* since June 1924.

Ernest W. Young, South Bend architect, designed the remodeled building. The contractor was Sollitt Construction Co., builder of the Notre Dame football stadium. Howard Jampol of The Jampol Co., engineered much of the press and mailing room conveying equipment and flooring.

## *Air Cooling-Heating*

THE offices and plant building of the South Bend (Ind.) *Tribune* are supplied with an elaborate temperature control system designed by engineers from the Minneapolis-Honeywell Regulator Co. It is said that the building is

Mechanical Executive Staff South Bend (Ind.) *Tribune*

GEORGE KUNZ, Composing Room Supt. — EARL CURRISE, Photoengraving Supt. — ROYLE RAGER, Stereotype Supt. — CARL SCHAFER, Pressroom Supt. — DON HOLSTEIN, Mailroom Supt.

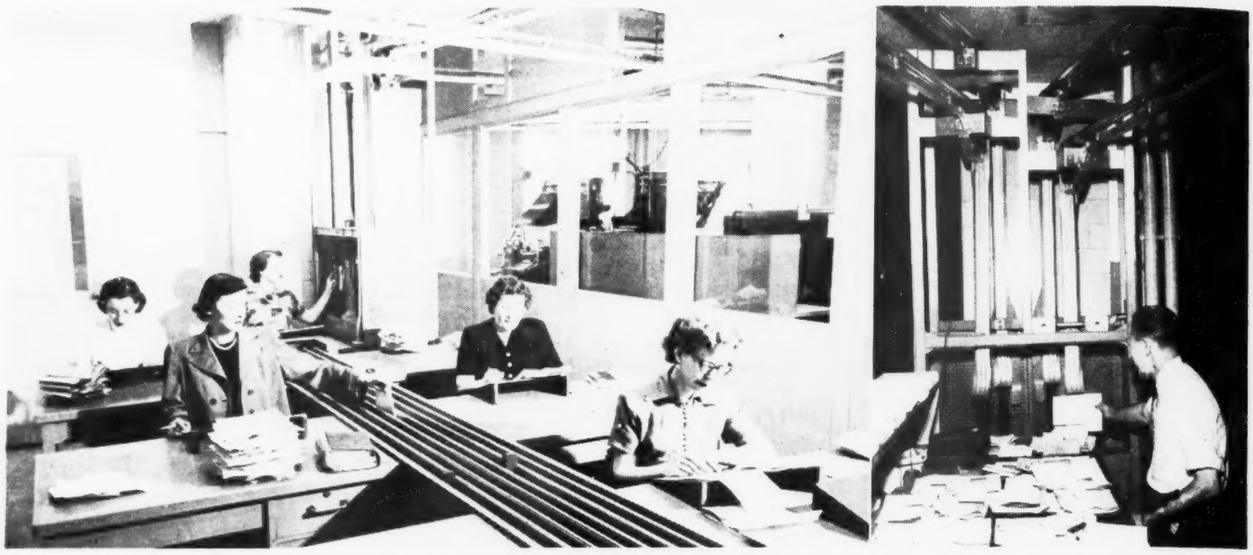


**Fig. 1.**—Proof Room Station, Novak Double Belt Conveyor is shown here in interior view (left) of South Bend (Ind.) *Tribune* proof room. The head proofreader at left of the caged-in receiving station is returning proofs to the composing room. As the proofs are received from composing room, the head proofreader sorts and deposits them in the slots of the horizontal section of the conveyor. There are a number of stop blocks in the slots. When a proof is to be sent to a particular reader, it is deposited in one of the seven slots and is stopped by the block opposite the reader to whom it has been sent. Underneath the slot frame there is a continuously running flat belt which propels the proofs along the slot. When a reader wishes to return a proof to the head proofreader, she places it in the center slot; a belt running in reverse direction to the one previously mentioned conveys the proof to the sending and receiving station. The head proofreader then returns the proof to the composing room. When a proof with original copy is halted in one of the slots by the stop block, it remains stationary until removed, the underneath belt traveling continuously.

At right, Howard Brown, Composing Room Copy Cutter, received copy from the editorial department via Novak double belt conveyor.

divided into 40 different temperature zones, each zone being equipped with its own thermostats. In warmer weather, cooling of the building is maintained by huge coils through which 55 deg. well water flows. In excess of 20,000 ft. of copper tubing is used to link together the individual thermostats, valves and motors comprising the temperature control system. The controls also function to operate the large fan system which circulates the cooled air throughout the building. As one of the *Tribune* executives expressed it: "We make and control our own indoor weather."

One of the features of the temperature control system is that not only can different temperatures be maintained in different parts of the building, but a number of thermostats fastened to the exterior of the building automatically take measurements of the outdoor weather. For instance, if there is a change in weather outdoors which cannot be felt immediately inside the building, the thermostats automatically adjust the heating and air conditioning system to compensate for changes in the outdoor weather condition.

It was pointed out that the in-built sliding temperature scale eliminates the shock felt when persons enter or leave the building in hot weather.

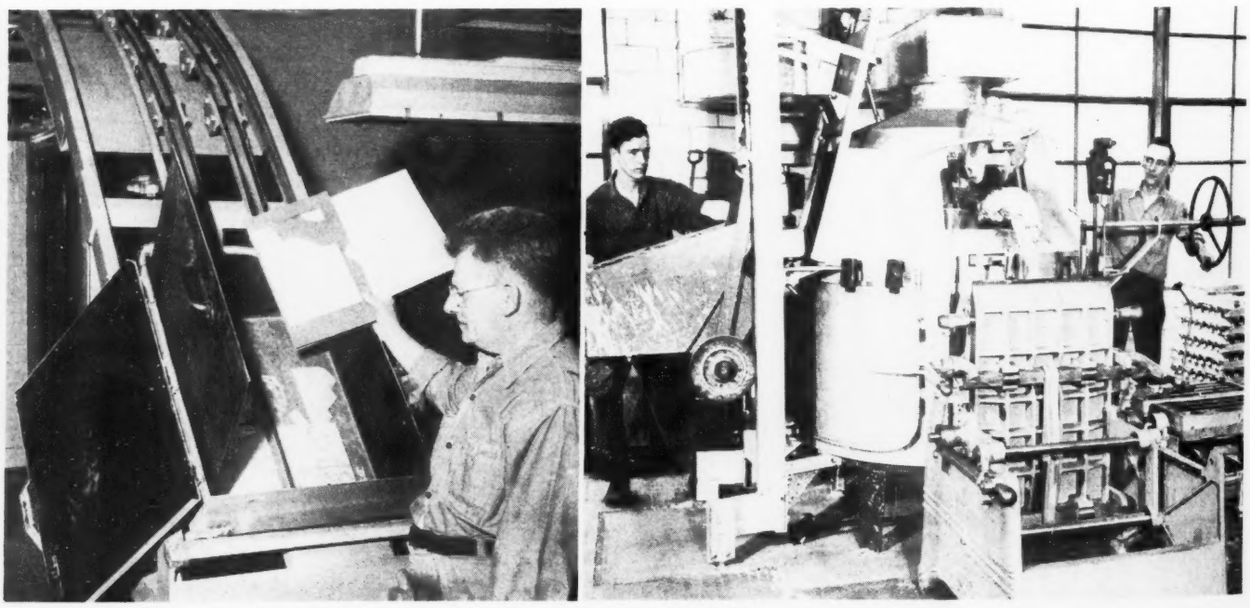
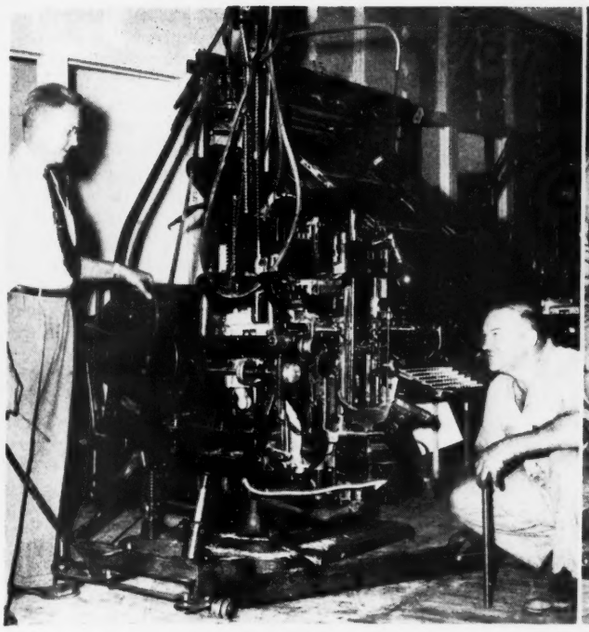


**Fig. 2.**—At left, Stereotyper Earl Kohli deposits stereotype shell casts and mats in Lamson Overhead Cable Conveyor box to be sent to the ad alley. Box is fitted with inner lid ¾ in. from bottom to permit placing type, cuts, shell casts and copy on galleys to prevent pieing during journey.

At right is shown the Big Chief Metal Remelting Furnace which is used for pouring shell casts and Margach feeder pigs for the composing machines. Laborious hand work is eliminated by Dumperin device and the International Electro-Pressure Automatic Metal Pump.



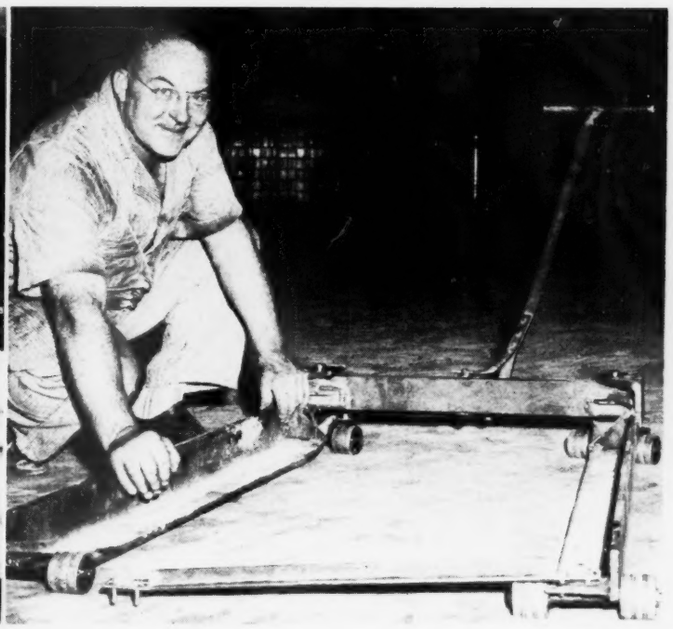


**Fig. 3.** —At left is shown Composing Room Supt. George Kunz and his Chief Machinist, George Bolton. Bolton explains that by means of a dollie which he made, he can move a line-composing machine to a new location, or roll it into the machinist's repair room for major repairs in 22 min.

Mr. Bolton demonstrates construction of dollie which he constructed for quickly transporting line-composing machines from one location to another.

One of the interesting comments made is that in the composing and stereotype departments, approx. 9100 cu. ft. of fresh air is circulated and exhausted each minute.

Air drawn into the building is passed through filters for removal of dirt or dust particles before being passed into the different departments.

The center point of the control system consists of a large panel located in the fan room. Here, one operator regulates temperatures in any part of the building by manipulating the proper buttons or switches on the panel. Setting one switch converts the system from winter heating to summer cooling or vice versa. In turn, the individual thermostats and controls function to maintain the temperature desired in each zone.

## *Conveyor Equipment*

SOME of the equipment used by the *Tribune* to transmit copy and materials from one department to another have been used more or less extensively by printing and publishing plants for a long time. It seems, however, that in the *Tribune* plant every known possible present use of this type of equipment has been installed.

*Novak Endless Belt Conveyor*—Has been installed to transmit copy from the news desk to the composing room and proofs to the copy desks, Fig. 1. Another Novak conveyor is used to send proofs from and to the composing room and the proof room. (See April 1950 issue of *Printing Equipment Engineer*, illustrated article entitled *Conveyor System and Proof Room in Newspaper Composing Room*, by Julian Eberle, Milwaukee (Wis.) *Journal*.)

*Lamson Cable Conveyor*—The enclosed conveyor box traveling on rails (Figs. 2 and 4) is used for sending stereo mats, electros and display advertising copy from the dispatch room on the first floor to the ad alley on the second floor, and also from the ad alley to the stereotype department on the second floor. Likewise, shell cast stereotypes, cuts, and mats may be sent to the ad alley; the ad alley may also send materials back to the dispatch room, including advertising proofs for delivery to the advertiser. In connection with the Lamson conveyor, an intercommunicating system is used.

*Cemco or Capital Plate Conveyor*—Conveys finished stereotype plates to the pressroom on the floor below. Eight plates per min. can be delivered. The conveyor can be reversed to return plates to the stereotype department.

*Cutler-Hammer Conveyors*—Two overhead conveyors deliver papers from the press folders to the mailing room.

*Jampol Feeder Belt aad Table*—Papers from Cutler-Hammer conveyors are delivered to

*Milwaukee Journal Feeder Mechanism*—Takes papers in loosely assembled form for bundles to the wire-tying machine.

*Mailing Room to Dock Conveyor*—This Jampol conveyor (Fig. 8) receives bundled papers from the wire tying machine and takes them to truck loading dock.

*Dock Conveyor Belt*—Receives bundles from mailing room conveyor for delivery to truck.

*Deflector Conveyors*—These two swingable conveyor extensions are used to deflect bundled papers from dock conveyor

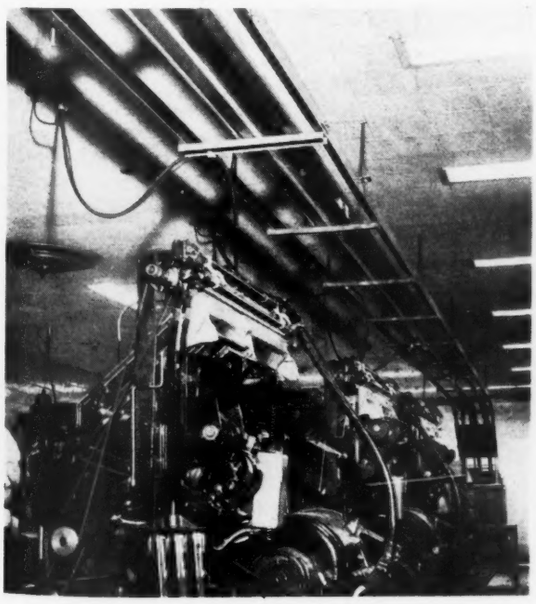


**Fig. 4.**—Here is shown overhead construction of the Lamson cable-operated conveyor and the ad alley receiving and sending station. (Stereo station shown in Fig. 2). Also, graphically illustrated, is appearance of overhead readily detachable electrical circuit wires for the Intertype line-composing machines.

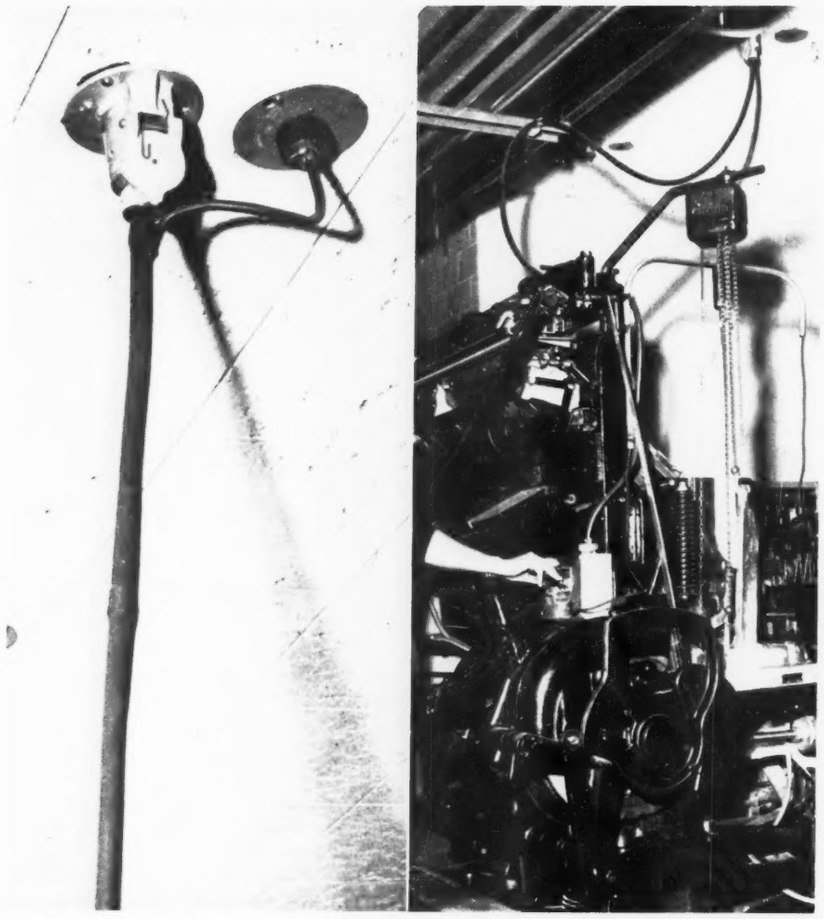


**Fig. 5.**—Closeup at left shows details of the plugging-in method used to connect electrical circuits with line-composing machines. The flexible four-wire rubber covered cord is fastened to a Pyle National plug at the upper end and a Hubbell type polarized plug is used for connecting the Square D Circuit Breaker panel with cabinet mounted on the machine column.

At right, is view of Square D Circuit Breaker panel with cabinet mounted at rear of machine column.

belt directly to rear of waiting delivery trucks.

## *Photoengraving Department*

IN THE photoengraving department (Fig. 7), Engraving Supt. Earl Currise has installed equipment for handling color work, as well as black and white engraving, expeditously. The camera equipment consists of a 31 in. Consolidated precision color camera with circular screen and a 21 in. black and white darkroom camera. A new Vandercook No. 219 color proof press with four sets of inking rollers and two storage cabinets together with a Vandercook register punch has been installed. Will take proofs of full newspaper page size. The stainless steel sinks all are equipped with temperature control valves. Other new Chemco equipment consists of a Model 2800 infrared stove, No. 101 plate wet cooler, No. 1700 dragon's blood powder cabinet, No. 1300 Whirler, No. 3000 cold grid printer and No. 501 zinc etching machine. The cold grid printer and No. 501 zinc etching machine. The cold grid printer is used for printing negatives on the sensitized zinc. A Niagara 36 in. plate cutter and a Graphic Arts plate washing machine. Other necessary equipment was retained during the equipment modernization program.

## *The Composing Room*

THE *Tribune*'s composing room is in charge of Superintendent George Kunz. In this department, there are approx. 75 employees with a skeleton force of 11 men on the night shift. The composing room is an extremely pleasant place in which to work. Wall finishes, and flush and suspended fluorescent lighting furnish plenty of illumination. Flooring is of hard maple blocks, $1\frac{5}{8}$ in. sq. by 1 ft. long.

It is immediately evident to the visitor that equipment modernization has been gone into extensively. Among the items mentioned by Mr. Kunz is the installation of eight Morrison C&G saw-trimmers spaced properly among 24 ad frames so that there will be one saw-trimmer for each three compositors. There are two Rouse rotary mitering machines in use.

There are 19 Intertype line-composing machines in the composing room, including three new machines of which one is a headletter machine and two are used for ad composition. The six ad alley machines are equipped with six-pocket mold disks and quadders setting composition from $5\frac{1}{2}$ pt. through 36 pt.

Other new equipment items are: A 12 ft. ad copy dispensing table specially designed to permit regulating flow of copy and assembly to and from the ad machines; a Vandercook electric page proof press for the ad alley; a Wesel hi-speed electric proof press for the news dump, making two now in use; a Nolan specially built press for proofing double pages in the chase; two Hamilton electric page storage cabinets of 20 page capacity each.

### Ad Alley-Stereo Dept. Conveyor

One of the innovations installed in the *Tribune* plant is a 100 ft. long Lamson conveyor (Figs. 2 and 4). The conveyor extends between the ad alley and the stereotype department. It is used for conveying mats (electros, plastics, and engravings, if any) to the stereotype department, and in turn, the mats and shell cast cuts from the stereotype department to the ad alley.

The conveyor track starts 42 in. from the floor and rises at approx. a 45 deg. angle to a height of 8 ft. When in motion, the top of the carrier box itself is 4 in. from the ceiling.

The carrier box is pulled by a $\frac{5}{16}$ in. cable winding around a speed reducing pulley 13 in. diam. About 30 sec. are required for the 100 ft. travel from station to station. Limit switches at each end of the track stop the carrier by means of a magnetic brake on the 1 h.p. motor. A limit switch under the carrier box lid slide prevents the carrier being started until the lid is closed. Once the lid is closed, the carrier may be operated from either station.

In addition to the top lid, the lower section of the carrier box, for a depth of $3\frac{1}{4}$ in., is fitted with a swinging lid. The bottom compartment is used for transporting closed end galleys loaded with cuts. The swinging or flap door covers the galleys and prevents spilling of cuts. The carrier box is constructed of 12 ga. steel and the inside measurement is 21 in. by 26 in. by 7 in.

After the shell casts, (photoengravings if any) and the mats have been returned from the stereotype department to the ad

George Bolton, Chief Composing Room Machinist, exercised considerable ingenuity in arrangingequipment for composing room maintenance operations at SouthBend(Ind.) *Tribune*. His instantly disconnectable linemachine electrical hookup is noteworthy.

alley, the mats of each ad are deposited in an envelope bearing the name of the advertiser, size of ad, insertion date and number of mats; the shell cast cut and photoengraving if any, are also placed in the envelope. If there are more than two small cuts for one advertisement, the closed end galley, instead of the envelope, is used as a receptacle. The same information as would appear on the envelope is marked on a strip of adhesive affixed to the outer end of the temporary storage galley. These envelopes are handled by the ad alley; the envelopes are filed according to day of insertion in the paper and the galleys are stored in two special steel cabinets.

When copy for an ad is run out by the ad alley foreman, the ad man goes to the filing cabinet and extracts the envelope (and if there are more than one shell cast) he also gets the galley containing the cuts and takes both to the ad dump. After the ad has been set, the mats and envelope are returned by conveyor drop to the dispatch room on the first floor.

After ad composition has been disposed of, the information on the adhesive tape on the end of the galley is removed and the galley is returned by conveyor to the stereotype department.

An intercommunicating system connects the dispatch room, the ad alley foreman and the stereotype department for use in connection with the conveyor.

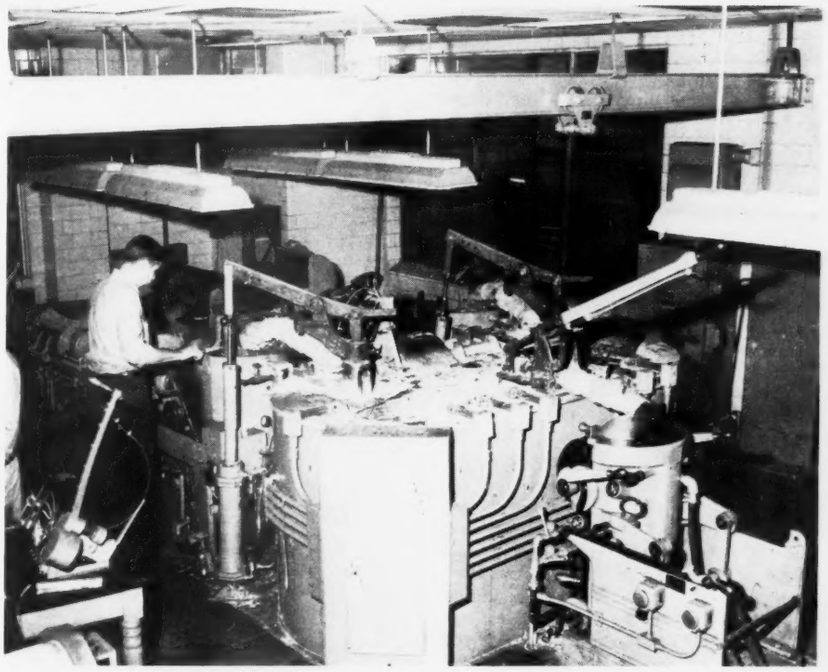


**Fig. 6.**—View of Wood 10 T. stereotype metal furnace. Pumps are operated by compressed air. Pouring spounts are encircled with Calrod heating units and insulated with asbestos. If one of the units should fail to function, a red light will show on the panel box controlling the circuits to the furnace. If one of the immersed electrical heating elements fails to function, a siren will sound.

## *Unit Electrical Hookup for Machines*

*PRINTING Equipment Engineer* is printing details about the flexibility of the electrical connections for the line-composing machines (Fig. 5) because in many plants once a machine has been wired for operation, it requires considerable work to disconnect a machine for moving. Chief Composing Room Machinist George Bolton explained that new line-composing machines are erected in the machinists' room. In addition, all major overhauling work on machines is done in the same room where the machinist will have tools and equipment immediately at hand. If it is necessary to shift a machine to position it adjacent to a bank or ad alley makeup cabinet or to reduce operator delivery travel, two machines can be exchanged quickly. In addition, this quick disconnection is a time-saver.

By pulling a special plug from a ceiling receptacle (after shutting off power to motors, pot heating elements, Mohr Saw, mold cooling blower and machine lights), the machine is ready to be mounted on a dollie and transported to the new location.

As will be noted in one of the accompanying illustrations, the four-wire conductor rubber covered cord connecting machine to ceiling receptacle is flexible. The polarized ceiling receptacle is No. AR25X (Pyle National). The Hubbell type polarized plug to fit is also made by the same company. There is one of these plugs at either end of the flexible cord. Thus, a cord plug can be pulled either from the ceiling receptacle or from the panel mounted at the back of the machine on the column above the main cams.

At the machine, the flexible cord is plugged into a Square D Circuit Breaker Panel with cabinet, as explained above, at the rear of the machine column. The panel is fitted as follows: (1) One 3-pole 20 amp. breaker for protecting all motors on the machine regardless of their function; (2) One 2-pole 20 amp. breaker for protecting the metal pot electric circuit; (3) There are two single-pole 20 amp. breakers for protecting the metal pot electric circuit; (3) There are two single-pole 20 amp. breakers for protecting all machine lights, including the trouble light. The transformer for the traffic light is installed on the back of the panel; (4) There is provided an extra 20 amp.

**Fig. 7.**—View in one section of photoengraving room which is in charge of Earl Currise. Shown are two Consolidated cameras. The one this side is 31 in. and carries a circular halftone screen. The other camera is used for black and white work.

breaker for possible future use; (5) There is also a twin convenience outlet mounted in the panel for utility use.

The line-composing machine outlets in the ceiling are connected so that every fourth receptable is a different circuit. This arrangement provides three positions in which a machine may be placed, giving 51 positions on the news side and 30 positions on the ad alley side to which machines can be moved by just pulling the plug from the ceiling. The current is fed on No. 8 wire from a 40 amp. breaker in the power distribution panel.

### Operator's Trouble Light

The Faraday signal board is mounted on a wall in the machinists' room. It is equipped with 25 bull's eyes operated by 24 v. A red signal light mounted in the composing room ceiling is tied into the circuit and both the bull's eye lamps and the red ceiling light are operated by a Minneapolis Honeywell relay. The signal panel in the machinists' room is connected to a 4 in. outlet box in the ceiling approx. 4 in. from the power outlet described above for each machine. On the 4 in. box is mounted a 3-pole Hubbell twist lock receptacle. From the twist lock receptacle and parallel to the power cord the circuit wire for the signal lamps extends to an operator's Faraday push-button switch mounted within easy reach of the operator.

In case of machine trouble, the operator depresses the Faraday button. This starts a synchronized motor flasher which in turn flashes the proper bull's eye lamp on the signal panel in the machinists' room, and also energizes the Minneapolis Honeywell relay. In turn, the current is sent to the red lamp in the ceiling.

### Machine Dollie

When it is necessary to move a machine to another position or take it to the machinists' room for overhauling, the machine is mounted on a specially constructed dollie (Fig. 3) and transported quickly to the new location. Moving time was 22 min. per machine during the two moving periods.

The sides of the dollie are constructed from two pieces of ½ in. by 4 in. angle iron, 4 ft. 20 in. long; each of these two pieces is bent up or offset parallel-wise at the back end to permit fastening a 1 in. shaft underneath and provide ¼ in. clearance from the floor, so that when the machine is resting in the dollie the base is only ¾ in. from the floor.

The two side pieces or rails are joined at the front with a piece of 1 in. by 3 in. channel iron set upright at each extremity of the 1 in. by 3 in. front cross tie piece. There is a tongue or handle connected centrally to the front cross tie piece.

For maneuverability, there are 24 Chevrolet transmission ball races for truck wheels, six at each corner. The front wheels swivel on a 1 in. shaft to permit change of travel. One man can pull a machine over a smooth floor.

Connection of the two side rails to the front cross tie piece permits swinging out the side rails at the rear of the truck. Each side rail is joined to the front cross tie piece by 1 in. diam. spindle which allows it to be steered.

When the dollie is backed up to a machine, the side pieces are spread outwardly at the back to permit placing the side rails at front and back of the machine to be moved. A jack is used to raise the base at the pot side of the machine. At this time one side rail is slipped under the base. Then the other side of the machine is raised. The back cross tie piece is put in place by means of the two hex. hd. screws at each end to keep the side rails from spreading from under the machine base.

The supporting space within the base allows room to accommodate a pedestal base machine (42 in. long and 30 in. wide). A star base machine fits into one dimension of the space one way. Since the star base is approx. 26 in. wide, a 2 in. by 4 in. scantling is dropped in the dollie frame to prevent shifting of the machine during transportation.

The dollie was constructed in the *Tribune* shop with the exception of drilling the 1 in. swivel holes in the forward end. This latter operation was done in an outside machine shop. Total cost of the materials for the dollie was approx. $45.

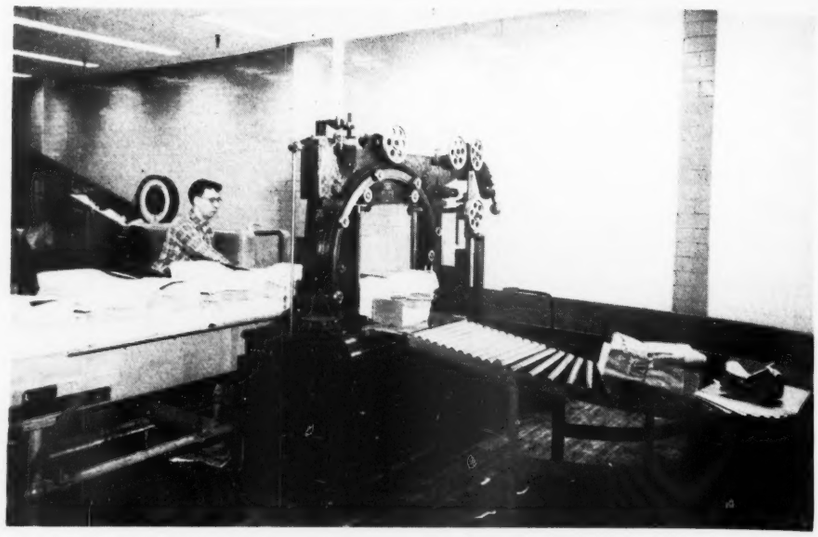


**Fig. 8.**—View in section of the mailing room. Bundles of papers are delivered to Signode-Parker Wire Tying Machine on Jampol Feeder Conveyor. After being bound with wire, the bundles travel around a U turn from the wire tying machine and are transported by conveyor up an incline as shown to the loading dock.

### Machinists' Room

The machinists' room was designed especially for maximum utility by those working in it. Floor space is ample enough to permit erecting a new machine or to overhaul one which has been removed from the production line. Interlocked glazed tile is used for the enclosure. The steel panels are fitted with clear glass to permit unobstructed view of the composing room. A hard maple top steel workbench extends across the side of the room nearest to the composing machines. Flush fluorescent lights illuminate the room.

A 12 in. swing by 36 in. lathe, ½ in. drill press and a portable arc welder are important equipment items. There is a sink with hot and cold running water. A pan type boiler is mounted on top the bench. Compressed air and gas lines are hooked up in the proper places.

Compressed air (100 lb. pressure), water and a matrix cleaner together with the boiler mentioned above are used to clean the keyboard cam frames; the cams and frames are not disassembled for this operation. In this way, a considerable amount of keyboard cleaning time is eliminated over the older hand cleaning way.

Running full length of the bench and placed immediately underneath the projecting edge of the maple work top is a ¼ in. copper pipe with three valves for convenient air outlet. A short length hose can be attached to each outlet.

## *Stereotype Department*

STEREOTYPE Supt. Royal Rager is proud of his department (as are the other departmental heads), since so much of the equipment is new and represents a considerable investment.

The stereotype equipment is of sufficient capacity to cast 1000 plates per week. Present average is 110 plates per day. Plates for *Tribune's* 2, 3 and 4 color work are handled in the plant. The *Tribune* prints its own Sunday comic section.

One of the principal items of heavy equipment is the Hoe 800 T. direct pressure press. There are four Hammond flat mat scorchers; two Sta-Hi Master Formers; a Sta-Hi Final Trim for trimming mat edges at their true curvature when placed in the casting box. The pouring spouts on the new Wood 10 T. obround electrically heated metal furnace (Fig. 6) are fitted with Calrod tubular heaters well wrapped with asbestos

(*Continued on Page 58*)

# Special Top Sheet for Packing

**On rotary, flatbed and platen letterpresses discussed by its inventor—Eliminates slur on relieved plates—Claimed to have great longevity.**

By HOMER L. BISHOP*

*President, Bishop-Stansell Company, West Carrollton, O.

IN DISCUSSING the recently developed Travel-Grip top sheet for printing press packing, the writer wants to comment upon the relationship of printing and impression elements on presses without going too much into detail.

On letterpress printing presses, the theoretical ideal condition of the relationship between the plate and impression cylinder on rotary presses, and the impression cylinder and form on cylinder presses, is that they must operate in true rolling contact. This ideal condition is not attainable in letterpress printing without compensatory measures because of the differences in the texture of the two rolling surfaces with paper interposed between them during the printing impression. If it were possible to print between two unyielding and truly rolling surfaces, all would be well.

When printing on rotary presses from curved plates, the printing surface of the printing plate should rotate at the same peripheral speed as the speed of the paper web fed by the packing cylinder. The printing surface of the printing plate should be substantially the same as the peripheral speed of the paper web being printed upon and which is fed between plate and impression cylinders. However, since makeready is necessary on practically all forms, the solids are built up and the highlight areas are relieved. This build-up of the solids changes the circumference of the printing or packing cylinder. Therefore, the ideal condition mentioned above cannot exist because the printing surface of the plate does not bear a true cylindrical surface. Or, if the makeready is in the packing, then the packing cylinder does not bear a true cylindrical surface. Due to makeready, whether in the packing, in the plates or under the plates, the solid areas are highest, the middletones are next highest, while the highlight areas are lowest in relation to the solid areas. Therefore, the distance radially from the axis of the printing or packing cylinder to the contact of the plate mounted on the plate cylinder at a given point will vary—the solid areas in the plate or packing having the greatest outside diameter and the highlight areas will have the lesser diameter with respect to the periphery of the plate. Fundamentally, the pressman wants to print in such a way that the graduated surfaces of the plate will exert pressure upon the paper according to their value, the solids exerting the greatest pressure upon the paper, without producing a slurred effect in the image.

### Purposes of Travel-Grip

The purposes of the Travel-Grip impression cylinder packing sheet on letterpress printing presses is to

(1) Provide a rugged top sheet, replacement of which will be required at less frequent intervals;

(2) Prevent undue wear on curved printing plates on rotary presses;

(3) Prevent the tendency of the printing plate to slur under certain conditions;

(4) Lengthen the life of packing on long runs on rotary printing presses;

(5) Permit periodic washing of accumulated ink which has been offsetted on the second impression cylinder packing top sheet from the still wet printing on the first impression side of the web on long runs on rotary presses without damage to the surface of the top sheet;

(6) Maintain harmonious travel of the printing plate and paper web on rotary presses printing from curved plane-surface plates or from plates the surface areas of which have been reformed (relieved) with respect to their printing values by makeready methods and

(7) Permit printing a number of different jobs on platen, cylinder and rotary presses without changing the packing.

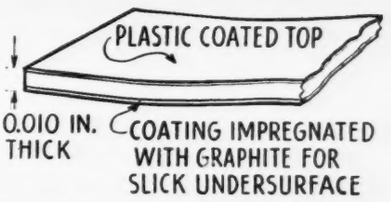



**Fig. 1.—This diagram, for illustrative purposes only, represents a section of Travel-Grip top sheet for press packing on letterpress printing presses. On rotary and cylinder printing presses the slight slippage afforded by the slick undercoating plus a small amount of circumferential slack in top sheet tension permits the paper, the plate and the top sheet to travel in unison when a high area of the plate is under printing impression so the printing can be done without slur. Impermeability of the plastic top coating to many type washes permits cleaning the offsetted ink many times from the second impression cylinder top sheet. This offsetting occurs during the second impression because the ink on the first impression side of the web has not dried completely.**

### Diametrical Differences in Plate

The differences in thickness of various areas of the printing surface of the printing plate (electrotype) is not great, but it is sufficient to cause the peripheral speed of various areas on the face of the plate to differ. Thus it will be seen that the areas having the greatest diameter rotate at the highest speed. It also follows that the areas having the greatest diameter press hardest against the paper web at the instant of impression. Now, these areas of the printing plate having the greatest diameter rotate faster than the average velocity of the surface of the printing plate and faster than the peripheral speed of the packing cylinder. Consequently, there will be a slight slippage between the printing plate and the web resulting in two abnormal conditions; (1) Rapid wear will take place in the high areas of the plate, particularly if the ink pigments are of an abrasive nature, and, (2) A slurring effect will be noticed in the print.

As is explained above, the variations in speed of the printing plate (due to diammetrical differences in the printing face of the plate) causes slippage to take place between the printing surface and the paper web, resulting in wear of the face of some portions of the printing plate and possibly a slippage between the web and the tympan sheet. The tympan sheet in the past has been made from specially treated paper. That being the case, it can be seen that where slippage takes place between the tympan sheet and the paper web, the tympan sheet in spots will be roughened and will wear, in that the same areas of the printing plate will engage the impression cylinder over the same areas for every revolution of the printing cylinders.

It is one of the main objectives of the Travel-Grip top sheet to eliminate both the wear in the plate and the slurred printing as outlined above.

### Travel-Grip's Prime Objective

The prime objective of the Travel-Grip top sheet is to provide a top sheet for the packing on the impression cylinder of a rotary printing press which will permit the paper web upon which the printing is being done to travel at any one instant of time at the same velocity as the most highly relieved surface of the plate which is in contact with the paper web. Before discussing how this is accomplished, the Travel-Grip top sheet will be explained.

### Travel-Grip Construction

The Travel-Grip top sheet consists of special manila stock. One side of the sheet is calendered with a plastic compound and the surface is of a light gray tone. In the coating process, the plastic compound effectively covers the fibres in the stock and actually bends them together. The reverse side of the Travel-Grip sheet is calender-coated with a carrier containing graphite to provide a slick surface. Total thickness of the sheet is approx. 0.010 in. It is furnished cut to size or in rolls in the usual way to the user.

### Applying Travel-Grip

When the Travel-Grip sheet is applied to the packing cylinder of a press it is put on in the usual way except that after it has been pulled taut by the reel, the pressman slacks off the tension one or two teeth of the reel ratchet. The slick underside surface of the Travel-Grip sheet is applied next to the hanger or second sheet of the impression cylinder packing. The plastic coated side of Travel-Grip represents the top surface of the packing which is contacted by the paper web.

It has been stated above that the reel at the tail end of the Travel-Grip top sheet is slacked off one or two notches of the ratchet after the top sheet has been pulled taut. It can be seen that under printing pressure there may be a slight circumferential movement of the top sheet. This slight circumferential movement of the top sheet is of the order of not more than a few thousandths of an inch. The slippage of the top sheet occurs when the highest areas (the solids) of the plate are impressed against the paper web. The solid higher areas in the plate, having the greatest diameter, rotate, as explained above, at the highest speed. These areas bear with the heaviest pressure upon the paper web and they also rotate faster than the peripheral speed of the packing cylinder. Thus the top sheet of the packing cylinder, having been adjusted to have a slight circumferential slackness, is caused to slip during the time the highest areas in a plate are in contact with the paper web. The slippage of the top sheet is aided and abetted by the slick underside coating on the underside of the top sheet. At these instants, the slacked-off top sheet and the paper web are permitted to rotate in unison when in contact with the solid (raised) areas of the printing plate. The top sheet resumes its normal position immediately after pressure of the high areas in the plate on the web has been released.

Another way to express one of the functions of this top sheet when it slips slightly during heaviest impression instants would be to say that the fixed line of impression has been transferred automatically to the upper surface of the sheet immediately next to the underside of the top sheet. The graphite-like coated surface assists in promoting the slippage.

### Travel-Grip Durability

One of the properties of Travel-Grip top sheet is its ability to withstand numerous cleansings on the second impression printing cylinder on rotary presses printing from curved plates. The plastic coating on the top surface of the sheet is resistant to numerous kinds of type washes and oils.

On some rotary presses, it is customary to cover the second impression cylinder with what is called an oil-wipe sheet. The oil-wipe sheet assists in minimizing the offset of ink on the first impression side of the sheet which has not yet dried sufficiently to eliminate the offsetting. When the printing plate on the second impression unit is impressed against the impression cylinder, some of the first impression ink (according to the printing image on the second impression plate) will be transferred to the second impression cylinder top sheet. Ink used in publication and commercial work may or may not dry hard instantly when offset on the second impression cylinder top sheet. It may become tacky. It may build up in an objectionable amount. Hence, the necessity for removing it at periodic intervals.

On a non-plastic coated top sheet, after approx. 50 thousand impressions, it must be removed and a new one applied. The reason is that the fluid used in cleansing the accumulated ink from the second impression cylinder top sheet raises the fibres in the sheet to such an extent that the top sheet becomes useless.

The exact longevity of the Travel-Grip top sheet at the moment under given conditions on the second impression cylinder is not known. In one instance, however, a large publication plant secured over 500 thousand impressions on the second impression cylinders on one of its rotary publication presses. The final number of impressions on this particular test reached the total of 525 thousand—475 thousand on one run and 50 thousand on another on the same top sheets. On the Travel-Grip top sheet discussed in this instance, it was found that the plastic surface was impermeable to the oil-wipe fluid used to remove the offsetted ink. Light oil or kerosene are recommended for cleaning Travel-Grip.

### Travel-Grip on Cylinder Presses

Travel-Grip packing is also supplied for use on letterpress cylinder printing presses. The packing is the same as that supplied for rotary printing presses. Its principles of operation are like those for rotary presses as outlined above. The top sheet is approx. 0.010 in. thick. To illustrate the utility of this top sheet, in one instance a well-known commercial printing plant conducted a test run on a flatbed press from chrome-plated electrotypes. The first job was a carton, three colors, nine up in the form. Form size was 27 in. by 35 1/2 in. The first run was 110 thousand cartons and a second set of nine up plates was run on the same topsheet for 132,000. In this particular job, ordinarily six or seven tympan top sheets would be required to finish the 242,000 impressions. The Travel-Grip top sheet was not changed for the three-color side of the form and but once for the backup impressions which were printed in black on both jobs.

On Miehle Vertical presses a number of test runs indicates that four or five jobs can be printed without changing the Travel-Grip top sheet.

### Photoengravers' Color Proofing

There is another type of Travel-Grip product. This one is used for making friskets by photoengravers on Vandercook color proof presses. This roll stock is white and, like Travel-Grip top sheet, is coated one side with a plastic compound. Total thickness of the stock is approx. 0.0045 in. It can be used in two ways for proofing photoengravings—as a frisket material, or it can be used as a mask and laid directly on the bearers of the engraving which is mounted in the bed of the press on patent base.

The chief characteristic of the photoengravers' frisket or masking material is that the plastic coating provides a greatly impermeable resistance to the vehicle with a certain amount of its pigment soaking through the sheet. Thus multiple cleansibility is present without breakdown of the surface. The sheet can be cleaned readily with light oil or gasoline. In an established mid-west photoengraving plant, as many as 78 color process proofs have been obtained with one Travel-Grip frisket. Because of the newness of the product at the moment, it is not known what maximum number of proofs could be gotten.

Friskets can be filed for ready reference if for any reason a set of color process plates is returned to the photoengraver for correction so that the frisket can be used again after the corrections have been made.

In the plant referred to above, the Bishop three-ply pre-press makeready mats are being used to underlay original engraved plates to bring out their tone values. This makes possible the treatment of subsequent electrotypes to the same values when the Bishop pre-press makeready is to be put into the plates if the information as to the values of treatment is made available to the user.

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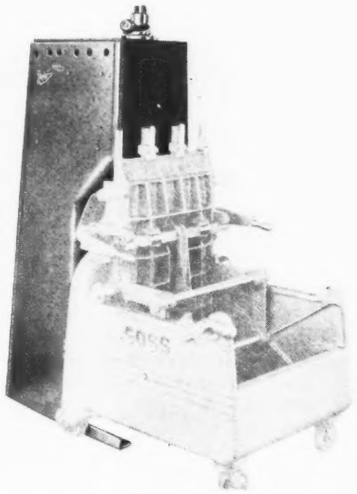
# Equipment & Supplies

**If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT *Engineer*, 1276 West Third St., Cleveland 13, Ohio.**

**When writing to us about any of the items described, and to save your time, just mention in your request the PEE symbol which appears at the end of each description.**

### Goss 54M Stereo Furnace

THE Goss 54M Furnace is designed for flat casting of stereotype shell or type high plates. The furnace is of welded steel construction and the principle of bottom pouring of the molten metal is employed. This permits metal to be withdrawn only from the bottom of the pot. Dross, which naturally floats,



View of Goss 54M Stereotype Metal Furnace with bottom pour spout. Goss casting boxes may be rolled to and from the furnace. May be adapted to pouring line-composing machine metal pot pigs.

does not reach the casting box and thus cannot contaminate the plate.

A new type of valve prevents molten metal leakage when closed. The valve is operated through an arc of less than 180 deg.

Metal melting heat is supplied by an atmospheric gas burner with adjustable automatic control for regulating metal temperature.

The pouring spout opening is at proper height for use with Goss flat casting boxes which are mounted on casters and can be moved in and out of casting position.

The pot is of 800 lbs. max. capacity. If only a few casts are needed, the pot can be partially filled for quicker melting of the metal.

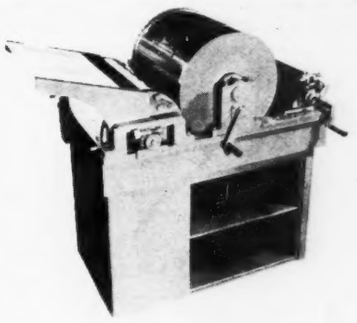
Although not designed specifically for casting composing machine metal pigs, Goss reports several users have adapted this furnace for such dual use.

The Goss 54M Furance is 21 in. wide, 32 in. from front to back, and is 61¾ in. high. Max. pot capacity, 800 lbs. of stereotype metal. Shipping weight is 760 lbs. Please mention PEE No. 158 when requesting further information.

### Curved Plate Proof Press

PRINTING Plate Supply Co. announces the Proof-Master, a variable sized curved plate proof press. Construction of the proof press permits interchanging plate cylinders for various sized plate diameters.

This unit was designed to speed up press operation by proving plates for accuracy and color registration before



going to the press, thereby greatly reducing down time on the press.

Incorporated in the press are a retractible impression cylinder and an inking unit to permit changing plate cylinders rapidly.

The plate cylinder is provided with a lockup device enabling the operator to change plates rapidly.

For more complete information please mention PEE No. 161 in your request.

### Process-Densitometer

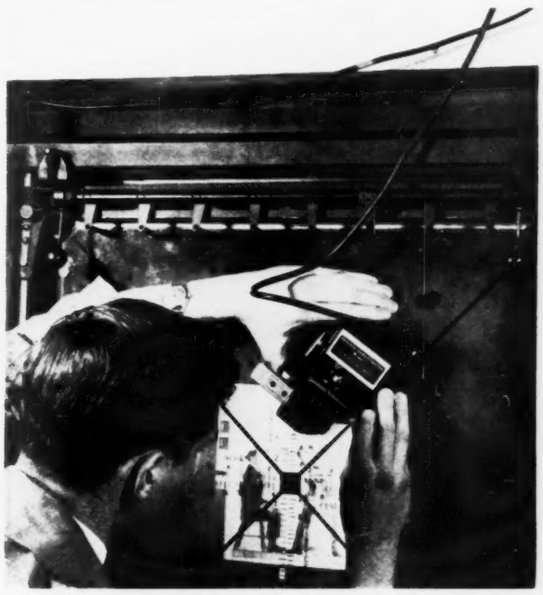
A SENSITIVE and flexible densitometer for photomechanical process work has been announced by the Eastman Kodak Co. Called the Kodak Process Densitometer, Model 1, states manufacturer, the unit has been designed for use in photomechanical reproduction to fill a need for an instrument that will put the various processes on a scientific basis and which will help to eliminate some of the rule-of-thumb methods.

With the new densitometer density measurements can be made directly on wet or dry materials. The densitometer head can be removed from the base of the instrument to permit density readings on negatives or positives anywhere in a 30 in. by 40 in. transparency. The head can also be attached to a transformer, which is also supplied, and this in turn can be plugged into the darkroom circuit so that density readings can be made on the ground glass of the darkroom camera.

With the Kodak Process Densitometer densities from 0.0 to 3.0 (100 per cent to 0.1 per cent transmission) can be read directly from the scale. With the proper auxiliary density, readings up to 4.0 (0.01 per cent transmission) can be taken. Density readings are uniformly spaced on the scale and as a result can be read from the scale when the machine is in operation.

The Kodak Process Densitometer is designed to operate on 110 to 125 v., 50 to 60 cy., a.c. only. The machine is ready for use after plugging into an outlet. No initial warm up is required, states sponsor.

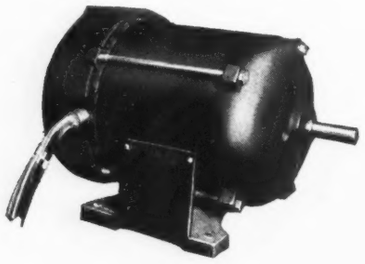
For further information about the Kodak Process Densitometer, please mention PEE No. 160 in your request.



The Kodak Process Densitometer (Model 1) can be used on the base provided with the instrument, or as shown here, it can be removed from base and used directly on camera ground glass for taking density measurements directly on wet or dry materials.

### G-E Motors

GENERAL Electric Co.'s Tri-Clad Single-phase Capacitor Motors have been extended to include a totally enclosed fancooled construction. The improved design provides starting capacitors and switch mounted within



the frame to provide maximum protection. Available in ratings of 1, 1½, 2, 3 and 5 h.p., the motors were developed for use where severe conditions of dirt, grit or moisture are encountered.

The motors are also available in explosion proof and dust-explosion proof construction for installation in hazardous locations. Typical applications are exhaust fans, coal stokers, fuel pumps, etc. Of cast iron construction, the motors have cast aluminum squirrel-cage rotors and are equipped with long-life ball bearings. Except for the 5 h.p. size, which uses 230 v. only, the new motors operate on 115/230 v., 60 cy. power supply. Additional details concerning these motors may be obtained by mentioning PEE No. 163.

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**Fire Extinguisher** — The Redi-Grip pressurized portable fire extinguisher, announced by Stop-Fire, Inc., may be removed from its bracket and operated with one hand. Designed for a wide range of industrial and institutional fire

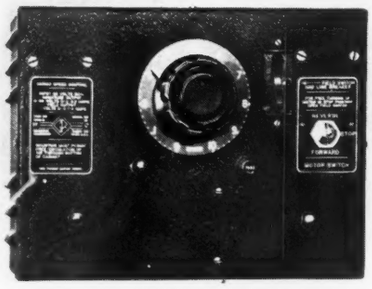
hazards, the extinguisher is available in 1, 2½ and 4 qt. sizes. Also available in a combination of charges which include CBM (chlorobromomethane) or carbon tetrachloride, individually or in combination, and the expellent may be either air or carbon dioxide. The range of Redi-Grip exceeds 30 ft., according to the sponsor, and the discharge time of the 1 qt. size is about 27 sec. at 70 deg. F. A safety-lock prevents accidental discharge. The extinguisher is approved by Underwriters Laboratories, Inc. Further details may be obtained by mentioning PEE No. 174 in your request.

### Masking Negatives

METHODS of masking lithographic negatives using Red Scotch Brand Lithographers Tape No. 600 are illustrated in a four page bulletin issued by Minnesota Mining and Mfg. Co. Printed in two-colors, the bulletin contains illustrations on opaquing small areas with the pressure-sensitive tape, stripping negatives together, and edging the overall negative to obtain a sharp, straight edge. Sponsor states the tape will not pinhole, can be removed and replaced easily, and will stand rough handling. When requesting a copy of this bulletin, please mention PEE No. 168.

### Improved Speed Control

THE Type 1700-B Variac Speed Control announced by General Radio Co. is claimed to have several improved features for ⅓ h.p. motor control. Sponsor states the improved control provides instant starting and freedom from tube replacement. This is made possible, the company reports, by the use of selen-



ium rectifiers in place of the rectifier tube used in the previous model.

The Type 1700-B control has the field supply isolated from the armature circuit by a transformer, which means that standard compound-wound motors having five leads can be reversed by means of the switch on the control. Braking is obtained in the stop position, although the motor can be stopped without braking if the a.c. input switch is used. The short-period overload capacity is large, continues the sponsor, so heavy loads can be started quickly. A time-delay magnetic circuit breaker protects the control and motor in the event of a stall.

Speed can be controlled with the Variac Speed Control from rated motor speed down to zero. The r.p.m. rise in speed between full load and no load is roughly the same at all speeds, sponsor claims, and is about 400 r.p.m. Standard motors can be used at their full ratings. Further information may be obtained by mentioning PEE No. 162 in your request.

### Hot Top Enamel

A READY-MIXED hot top enamel has been developed by General Plate Makers Supply Co. for use on color and black-and-white printing plates. It is reported that the new enamel has a tough, stable top and is unaffected by temperature changes or weather conditions. Further claims made by the sponsor for Scherer's Hot Top Enamel, as the product has been designated, include uniform exposure time, elimination of top troubles in color work and pin holes or lifts during etching, and clean, scum-free prints. The hot top is also suited to electric etchers. Additional information may be obtained by mentioning PEE No. 164 in your request.

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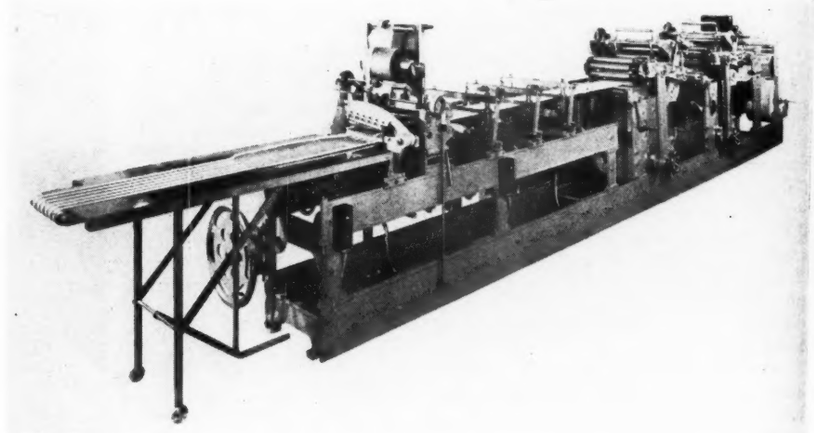
### Pearce Forms Press

THE Pearce web-fed, job press is designed primarily for carbon interleaved work and continuous form printing at an operating speed of 6500 per hr., according to Orville Dutro & Son, Inc. The press can print on one or both sides of the paper, imprint, number, punch and line hole punch, perforate rotary and crosswise, attach carbon, and can be equipped to deliver work cut in sheets or folded for flat pack register forms.

The machine can also be utilized for the production of tags, tickets, labels, etc. It is designed to print from individual type, electrotypes, stereotypes, plastic plates or rubber plates. It can be arranged so that the work can be delivered in multiples of 1-on, 2-on, 3-on, 4-on or more for convenience in collating and subsequent work where desired. Make-ready features incorporated in the press include removable fountains and in-motion adjustments. If additional information is desired, please mention PEE No. 173 in your request.

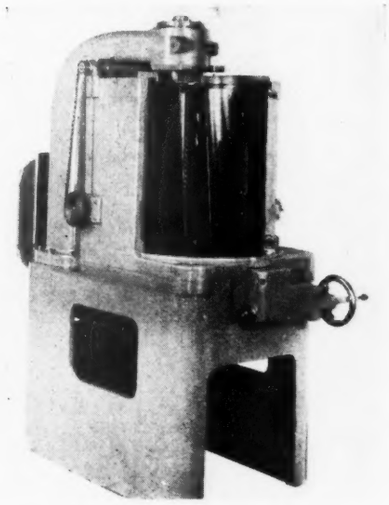


**Pearce web-fed job press for printing carbon interleaved forms announced by Orville Dutro & Son, Inc. Press operates at a reported speed of 6500 per hr.**

### Curved Plate Shaver

A CURVED plate shaving machine is announced by Printing Plate Supply Co. The Curv-Master, states sponsor, provides makers of curved printing plates with a single unit that will handle plates of various diameters and sizes.

The curved bed of the unit is in a vertical position to permit easy handling of



plates. The chips are directed to a bin beneath the machine.

A rotary type cutting knife, powered by a 10 h.p. motor, it is claimed, permits shaving any sized plate without locking the plate in position.

A mild plate makeready can be obtained by placing a face mat on the plate during the shaving operation. It is further stated that because the plate is forced into its natural curved position during the cutting operation, the maximum in accuracy is obtained.

The change over for plates of various diameters is made by adding the desired saddle and the adjustment for plate thickness is set by a visual micrometer reading.

This machine was designed to accommodate plates fabricated by the Centrifugal Casting process. The unit can also be used for shaving curved stereotypes.

For additional information please mention PEE No. 159 in your request.

### G-E White Lamp

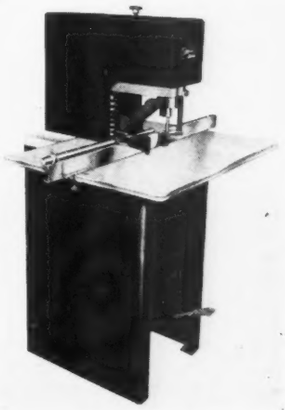
INTRODUCTION of a 60 w. incandescent white lamp has been announced by General Electric's Lamp Div. According to the sponsor, the new lamp contains an inside Q coating that spreads the light evenly over the entire surface of the bulb. The coating is composed of a silicon compound which is said to give near-perfect diffusion. Claims made by G-E for lamps with this type coating are that they cast soft shadows, lessen reflected glare, diffuse the light evenly, and have a white, clean appearance. These advantages are said to be provided without appreciable loss in the amount of light produced. The 60 w. size is the fourth in a line of white lamps made available by G-E. Others are the 100 w. size, the 50, 100, 150 w. R-40 Indirect White bulb, and the 100, 200 and 300 w. 3-Lite bulb. Please mention PEE No. 179 when writing for further information.

### ATF Dom Casual

AMERICAN Type Founders has announced a hand-lettered type face, to be known as Dom Casual, which is designed for combination with other ATF foundry type faces in modern layouts, emphasizing messages, story heads and punchlines. The type face is available now in 36 pt., with projected sizes of 18, 24, 30, 48 and 60 pt. in preparation. The idea for Dom Casual belongs to Steve Watts, Manager of ATF's Type Merchandising Dept., who was seeking a "free and easy hand lettered looking face." The face itself was designed by Peter Dom, Hand Letter Artist of New York, who, according to ATF's announcement, had to fit the style of the typeface with other types for body and display lines. Another requisite, states ATF, is that the face had to be pleasant on the eye and easily readable. If additional information is desired, please mention PEE No. 177 in your request.

### Paper Drilling Machine

A FOOT power, single spindle paper drilling machine, designated the Super Speed Drillmaster, has been reported by Super Speed Printing Machinery, Inc. Operations performed by the Drillmaster include standard round



hole drilling, round cornering, V-slotting, slitting, Kalamazoo punching, ribbon drilling, and special operations such as thumb hole punching and notching.

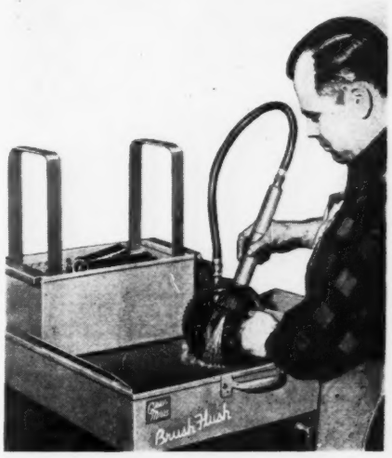
All operations can be performed on a full 2 in. lift of paper, according to the sponsor. The machine will accommodate taper shank style hollow drills from 1/8 in. to 1/2 in. diam. The working table measures 24 in. by 32 in. and the unit will handle a 2 in. lift of stock from onion skin to heavyboard.

An automatic side guide and side guide release permits the operator to drill an entire lift without removing his hands from the stock. The Drillmaster is designed with a built-in chip drawer and tool trays on either side of the drill hood. A concealed overhead light illuminates the working area while the drill is in operation. Please mention PEE No. 175 when writing for further details.

### Cleaning Machine

A BENCH type Parts Cleaner has been reported by Graymills Corporation, designed for cleaning engravings, type matter and machine parts. Designated Brush-Flush, a hollow handle brush is attached by means of a tube to a pump to produce a steady flow of solvent at the end of the bristles.

Sponsor states that oil, grease and dirt are flushed away as they are loosened with the brush. A double filtering arrangement assures a clear cleaning solu-




tion. Parts are cleaned on a 12¾ in. by 20 in. screen platform. This is designed to capture dirt flushed off the parts. Small particles of grit, chips, etc., passing through the platform screen are retained by the baffle or second filter screen located at the pump intake. A 2½ gal. soak tank with dip basket, which is part of the device, is removable.

Main tank dimensions, 20 in. by 20 in. by 4 in.; capacity 2 to 3 gals. Soak tank dimensions, 7 in. by 13¾ in. by 9 in. high; average capacity, 2½ gals. Pump, 1/25 h.p. Motor, 115 v., 60 cy., 1 phase, 5 ft. cord and plug. Additional information is available by mentioning PEE No. 180 in your request.

### Exposure Controls

A FULLY electronic light-integrating device for predetermined negative density and density range is illustrated and described in a four page bulletin by Equipment Div., Precision Engraving Co. Designated Totalume Controls Exposure, the device is designed to control the exposure in color, process, halftone, commercial, gravure and copy photography. It is stated in the bulletin that the instrument meters light independent of voltage fluctuations. It permits the operator to observe the counting for the exposure by means of neon indicator lamps located on the face of the device. A full page of the bulletin is devoted to technical data on the operation of the Totalume. A copy of this bulletin may be obtained by mentioning PEE No. 166 in your request.

### Profit Rule

ANSWERS to problems in profits, prices, costs, discounts, percentages, etc., can be obtained with the Calculaide Profit Rule introduced by American Hydromath Corp. The device is said to eliminate longhand calculations in all fields of business where percentage

computations are made. Two scales around the edge of the instrument indicate cost and selling price. Percentage, profit, discount, etc., appear in appropriate windows. The device can also be used for multiplication, division, ratio and proportion in the same manner as a conventional slide rule. Measuring 4 in. diam., the pocket instrument is made of a non-warping, non-shrinking plastic material. Contrasting colors are used to add speed and convenience in obtaining answers on the rule. Sponsor claims the Calculaide Profit Rule is not affected by moisture, ink or perspiration, and can be cleaned with a damp cloth. Further details may be obtained by mentioning PEE No. 170 in your request.

### Vibration Mounting Felt

A METHOD for selection of the right grade and weight of vibration mounting felt is described in a 20 page booklet prepared for industry by American Felt Co. and entitled *How To Reduce Vibration*. It is pointed out in the booklet that when a machine is properly mounted on Vibra-Mount felt, it rests on a resilient cushion which reduces the amount of vibration transmitted to the floor. According to tests made by American Felt engineers, as much as 85 per cent reduction in transmitted vibration has been recorded after such an installation. Copies of the booklet are available by mentioning PEE No. 176 in your request.

### Truck Maintenance

MORE than 50 illustrations are used in the 16 page bulletin entitled *Care and Maintenance of Industrial Trucks*, issued recently by the Baker Industrial Truck Div., The Baker-Raulang Co. Descriptions of each illustration deal with the steps to be taken within the plant in preventive maintenance and annual check-ups of industrial trucks. It is maintained in the bulletin that the service life of industrial trucks can be extended immeasurably and more efficient performance can be assured by a planned program of preventive maintenance. The bulletin is divided into two sections. One part illustrates the vital checking points of industrial trucks that should receive weekly attention. The other shows the slower wearing parts of a truck which are covered by an annual check-up. Copies of this bulletin may be obtained by mentioning PEE No. 172 in your request.

### Packaged Press Controller

GENERAL Electric Co. has prepared a four page bulletin (GEA-5614) in which is described and illustrated the packaged a.c. fully automatic printing press drive controllers. The controllers are designed especially for weekly and small daily newspapers in ratings from 40 to 75 h.p. The press-drive controller is equipped with a 6-position load-adjusting switch, with built-in autotransformer, which provides any press combination desired, from all units and folder down to single-unit fly sheet jobs. Cutaway halftones in the two-color bulletin show the features of the G-E controller. The performance record of a New England newspaper press on which similar equipment is installed is also included. Please mention PEE No. 167 when requesting a copy of this bulletin.

### Doyle Sheet Dryers

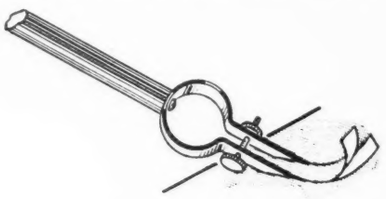
APPLICATIONS of the Doyle Super-Power Infrared Sheet Dryers are illustrated and described in a two-color, two page bulletin issued by The J. E. Doyle Co. According to the bulletin, such dryers are available for all types of letterpress, offset, newspaper, and specialty presses, both sheet and web-fed, flat-bed and rotary. They are also used for ruling machines, gluing machines, on folding machines to aid in static elimination and for other purposes in the bindery. On offset presses, the infrared dryers are designed to be used ahead of the impression to pre-condition paper stock by equalizing moisture content. Still another use, is in connection with the application of pyroxylin and other synthetic lacquers, wax, hot melt, water solvent, and light sensitive coatings; also for impregnating various materials with latices and in laminating operations. Another application is for heating and maintaining surface temperatures on calendar and embossing rolls. Copies of the bulletin are available by mentioning PEE No. 178 in your request.

### Day-Glo Gravure Ink

DAY-GLO inks, until recently, have been confined for use by the silk screen process. Some time ago, Day-Glo fluorescent surfaced paper stock upon which printing with stock inks could be done by letterpress or offset was announced. The latest development, announced by Fred'k H. Levey Co., New York, is that Day-Glo fluorescent ink has been developed for sheet and roll-fed gravure printing. Colors available are fire orange, Saturn yellow, neon red and signal green. It is said printing may be done on nearly any kind of paper. The ink especially suited to smooth surface stocks. The Levey gravure inks may be used in printing magazine or catalog inserts, greeting cards, box covers, and fancy wrapping papers. It has been announced that the fluorescent gravure inks are not intended to be used outdoors nor for window displays. When requesting further information about Levey Day-Glo Fluorescent Gravure Inks please mention PEE No. 171.

### Twin Cutter

A TWIN Cutter Knife is available from Mark Specialty Co. It is for use in the printing and offset-lith plant. It may be used in cutting lines typed by Visitype, Varitype or IBM type-



writers. It can also be used for cutting stencils for silk screen process, offset negatives and the like. Cutting width of the knives is adjustable up to $\frac{1}{2}$ in. Overall length of the knife is $6\frac{1}{2}$ in. Handle is fabricated from aluminum for light weight. For further information, please mention PEE No. 169 in your request.

### Photomechanical Equipment

A 36 page catalog devoted to Robertson photomechanical equipment for photoengraving, offset and gravure departments is available from R. R. Robertson Co. Illustrations and descriptions appear with each equipment item mentioned in the catalog. Among the cameras included are darkroom, gallery, distortion, precision, overhead, darkroom prism, and convertible models. Along with detailed specifications for each camera, available optional equipment is also listed. Among the other equipment designed for camera and platemaking departments, are included selectors and cases, film cabinets and holders, diaphragm control, optical accessories, lighting units, temperature controlled sink, and printing frames. Also standard plate coaters, tables for various operations, and etching machines.

Also available is an eight page, two-color bulletin descriptive of the Robertson Overhead Precision Camera. Close-up illustrations of the copyholder, lensboard, re-registering and side screen elimination operations are shown in the bulletin. A series of illustrations is also included on the operation from the darkroom end of the camera. Please mention PEE No. 165 when requesting either the catalog or bulletin or both.

# Technical Bulletins Gratis for Asking

## *Pressroom*

### Cosmopolitan Press With Intrasertor

Wood Newspaper Machinery Corp.'s brochure on its Cosmopolitan Press with Intrasertor is copiously illustrated. Consists of 18 pages with transparent acetate front cover and plastic spiral binding. The Intrasertor enables a newspaper to increase its collect products in steps of 2 pages for standard size papers, or 4 pages for tabloid size papers. With a 1½ unit press, Intrasertor and folder, the following standard size newspapers can be produced: Black—One section papers in 4 to 12 page products; two-section papers in 8 to 24 pages products. In various combinations black and color in one- and two-section papers can be produced for standard and tabloid size products. Please mention PEE No. 150 when requesting this brochure.

### Portable Ink Fountain

The Capco Portable Ink Fountain, manufactured by Capital Tool & Mfg. Co., for providing spot color on newspaper presses, is illustrated and described in a four page bulletin. Please mention PEE No. 145 when requesting this bulletin.

### Vulcan Press Blankets

Vulcan Rubber Products, Inc., presents swatches of top and underpacking for newspaper presses in a black and green six page continuous fold bulletin. There are four samples of top packing and three of underpacking. Uses of each in combination are given. Other technical data is presented. When requesting this bulletin please mention PEE No. 129.

### Electro-tab Autopaster

This is a 4 page, 8½ in. by 11 in. bulletin printed in black and green ink and is illustrated. It is descriptive of Wood Newspaper Machinery Corp.'s Electro-tab Autopaster which manufacturer states is a full speed web splicing unit for installation over any existing press newsprint reel. When requesting this bulletin please mention PEE No. 151.

### Cooksey Web Control System

Four page illustrated bulletin, with which is included a 7 page resume, is devoted to discussion about Collmar Corporation's Cooksey System of Web Control for magazine and newspaper rotary web printing presses. In case of a web break, wrap-ups around cylinder are eliminated. By mentioning PEE No. 154 in your request, a copy of this bulletin will be sent to you.

### National Bundle Tyer

Four page illustrated bulletin is descriptive of The National Bundle Tyer Co.'s Saxamayer SR1C Fully Automatic Newspaper Bundle-Tying Machine. Machine uses sisal, jute or hemp twine of any ply up to 3/16 in. diam. Compresses and ties up to 20 bundles per min. Bundles may be single or double tied or cross tied at operator's option. Tied bundles automatically ejected to chute or conveyor line. Please mention PEE No. 128.

## *Miscellaneous*

### Equipment Vibration Control

A series of five illustrated bulletins has been published by The Korfund Co., Inc. These are descriptive of devices and materials for controlling and/or isolating vibration of machinery. The purpose of each type of control is explained. There is considerable technical material in these bulletins. They are titled as follows: *Korfund Vibration Control, Korfund Universal Vibro-Isolator, Korfund Cork Products, Korfund Elasto-Rib and Armstrong's Vibracork.* Please mention PEE No. 149 when requesting copies of these bulletins.

## *Mailing and Shipping*

### Wiretyer Bulletin

The Wiretyer is an automatic machine for tying with wire magazines, newspapers, paper rolls, pallets, flat paper and many other types of materials into predetermined bundles. Wiretyer Corporation states machine is rated at 1800 packages per hr. or 3600 individual ties per hr. Max. package is 16 in. by 28 in. Min. package is 11 in. by 3 in. If you wish a copy of this illustrated four page bulletin, please mention PEE No. 127.

### Wrapping and Banding

How the Collmar Corporation's Collmar Publication Wrapping or Banding Machine operates is explained and illustrated in a fold-and-a-half bulletin. Publication may be wrapped and pre-addressed labels applied to wrapper or Speedaumat stencils may be used, or a Cheshire head may be applied to the machine to apply labels from a Dick Strip Roll. Operating speeds range from 7200 to 10,000 per hr. according to book size and whether flat wrap or fold wrap. Pre-printed bands may be applied in same manner as a flat-wrapped book. Please mention PEE No. 153 when requesting this bulletin.

# LETTERS

To the Editor

MY attention has been called to *Printing Equipment Engineer*, July 1951, page 19, "Increased Sentiment Against High Shrinkage" wherein you state "The ANPA advocates an 11.6 pica column with 3 pt. column rules rather than to shrink the mat to obtain the narrow page width." The ANPA does not advocate any specific column widths or any specific size of column rule. As an association we take no position and it is strictly up to each newspaper as to how it obtains web width reduction.

My opening remarks in reply to Leon Link's statement went on to point out that even if publishers and national advertisers did agree to narrower forms we would not eliminate shrinkage. It is my feeling that publishers would continue to require high shrinkage in an effort to keep down their ever increasing costs. High shrinkage is with us to stay and we all have the problem of finding ways and means of keeping up quality while utilizing this high shrinkage.

C. M. FLINT,
*ANPA Research Director*

## Conference Date Changed

Meeting date for the Great Lakes Newspaper Mechanical Conference has been changed to January 20, 21 and 22, 1952, Hotel Statler, Detroit. The change in dates was made necessary because of the meeting of the Society of Automotive Engineers during the week of January 13, 1952, in Detroit, about 5000 people being expected. President of the Great Lakes Conference is Joseph McMullen, Asst. Production Mgr., Milwaukee (Wis.) *Journal*. Secretary-Treasurer is Don M. Clark, Stereotype Supt., Grand Rapids (Mich.) *Press*.

## Cleveland Supply Men

The Printers Supplymen's Guild of Cleveland held its first organizational meeting recently with 25 sales representatives from the Cleveland area present. Guests at the meeting included W. Lincoln Noelle, representing the Intl. Printers Supplymen's Guild and the Chicago Guild, and Dick Manley and Marvin Lohr, representing the Detroit Guild. Organizer of the Cleveland group is John Morehouse, Manager, Home Office District, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O. Plans were made at the meeting to elect officers and formulate By-Laws and other details to become a member of the International. Two members were selected as delegates to attend the Intl. Printers Supplymen's Guild convention held last month in Boston concurrent with the Craftsmen's convention.

# The ABC of OFFSET

***For Letterpress Printers***

***By George Jos. Lenzer***

## XIX—COLOR HALFTONE

FINE COLOR PRINTING—How often are these words used in advertising some ambitious printer? That is a moot query. Many are the printing establishments who never do any more than print a few solid tint plates in combination with black and white copy. There may be a pink panel, or even a green one. True, color is printed, but is this color printing?

What about halftone reproductions? Can he handle them?

Can he handle them in color?

Not without knowing something about the angles.

### Let's Learn the Angles

We have learned from the action of *light* and its composition, that it moves in waves and is composed of certain rays or colors—red, green and blue; ultraviolet and infrared.

The photographer, we have learned, paints the reproductions with *light*.

In printing color, we are using pigments, many of which are imperfect in relation to the color spectrum of *light*. Though imperfect, the pigments used are made visible in their true chroma and brilliance through the action of *light* by reflection and through absorption.

Blending of various tones and graduations in color rendering is accomplished by the reflection of the colors in combination with the reflections of white light from surrounding areas of white paper. It must be remembered that each dot prints a solid color and not a tint.

In pigments, paints, inks, dyes and other color derivatives, there are thousands of different known colors, hues, tints and shades.

All of these thousands of colors are made visible to the human eye through the action of white light and its components of red, green, blue, and the ultraviolet and infrared waves.

Yet, the printer or lithographer, is expected to reproduce the same thousands of colors with a limited number of pigments such as magenta, yellow, and blue or cyan, which are considered to be standard colors for reproduction.

### Does the Artist Know?

The artist is given an assignment to make an illustration. Does he confine himself to the limitation of three standard pigments or colors? Definitely not. If it will help him to emphasize some definite features or portion of his creation, he will employ any of the thousands of colors available to him, without regard to the difficulties to be experienced in the reproduction of his work of art.

### Does the Customer Know?

Whether it be a bottle of beer, a shirt, or a pair of socks, if the illustration has the detail, color, shading character and texture, the customer is happy and pleased to have such a fine piece of art and craftsmanship. No matter how many of the thousands of color pigments were used in the original, he insists that the reproduction be made in two colors if possible, but no more than four.

### Help Yourself to the Aspirin

Without any knowledge of the problems presented, a tyro is hard put to find the answer. There are a great many platemakers who will attempt to meet the problems in order to get the business. Some try to accomplish the project with the three standard colors. Frequently, the results are poor. Then the platemaker will ask for the right to use a fourth color. If granted, ten to one, he'll use black which is no color at all.

It's questionable whether or not the results will be satisfactory.

Many platemakers, if permitted to use five or six colors in the production of a color reproduction, are lost, not knowing how or where to use them.

The dyed-in-the-wool lithographer does know how, when, where and why more than three or four colors should be used, and he knows what to do with them.

Look through your inkmaker's sample book. How many different colored inks are shown? The inks are scientifically compounded and are prepared to serve definite purposes.

### Colors Must be Sold

When considering and estimating a job which definitely requires more than three or four colors to effect an almost perfect duplication of the original, it's better to insist upon the extra colors, rather than risk disappointment and possibly lost customers.

Since scientifically developed color selective machines, such as the electronic scanner, are not economically feasible for the average shop, the alternative to use extra colors is one that should not be discarded.

### Color Angles

In preceding installments, halftone dot formation and angles for black and white reproduction were described and illustrated. Now as we enter into the subject of color printing, we must expand our knowledge of the geometrical angles. (See Fig. 32, *A* through *F*).

It will be noted that with each illustration, center tick marks are incorporated. In color reproduction, center marks at the top and bottom and on both sides should be placed on all original copy. This is important.

In figure 32A, and all others of the illustrations, we must imagine the square border to be the square opening in the base of a linen tester magnifier. The circle represents the lens.

In Fig. 32A, we see that a square is composed of four 90 deg. angles, the sum of which totals 360 deg. The bisecting lines of the circle also comprise four 90 deg. angles, the sum of which totals 360 deg. Each circular halftone screen or rotating copyboard is graduated into 360 deg.

The circle is divided into four sections called the quadrants I, II, III and IV (Fig. 32A). The angles of the circle with which we are concerned are situated in the quadrants I and II. In Fig. 32B, are illustrated the quadrant I and part of quadrant II.

The horizontal line 0 and the vertical line 90 deg. form a 90 deg. right angle. When the circular halftone screen is set to this 90 deg. reading; it is set at the yellow angle, for four-color reproduction.

Being the lightest of the three color families, yellow is the only one which can be used effectively in close proximity to any of the others. This is indicated in Fig. 32B, where the angles 75 deg. and 105 deg. are separated from the yellow or 90 deg. angle by only 15 deg.

Yellow, generally the first color down, is usually the first color listed or named when colors are determined for any color reproduction, whether by a designated three-color or four-color process.

Four-color process screen angles are as follows: Yellow 90 deg. red 75 deg., blue 105 deg. and black 45 deg. Three-color process angles are set to the accepted standard readings as follows: Yellow 105 deg., red 75 deg., and blue at 45 deg.

Where additional colors are allowed, they are made to conform to the standard screen angles designated for the basic color families. Examples: Light fleshes, buffs and yellow oranges or chromes are assigned the same angle as that of the basic yellow. Dark fleshes, pinks, red orange, dark reds, maroons and all shades in the red family are printed at the red angle. Tints of browns are also printed at the red angle.

Light blues, dark blues, purples, and light tints of green are set to the blue angles.

Dark browns, all shades of grey, light

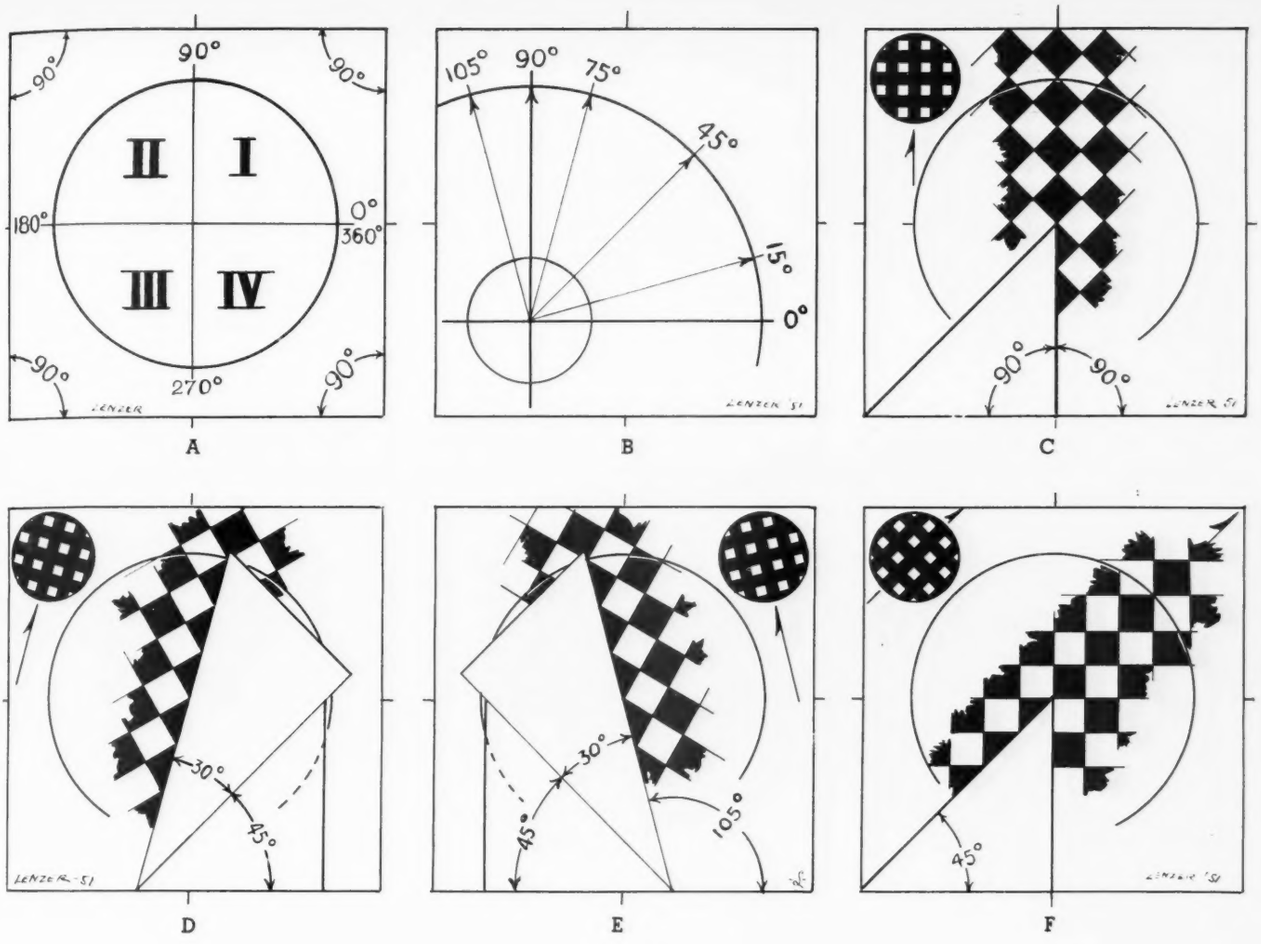



Fig. 32.

and dark, are printed on the black angle, as are also the dark greens.

### Reading the Angles

Because of the human element in the reproductive procedures, it is essential that all persons concerned with halftone reproductions should learn how to read the angles.

Experienced workmen develop a sort of sixth sense, in the ability to read the angles without the aid of a protractor or triangle, as illustrated in Fig. 32C through 32F.

It is well for the inexperienced operator to use the protractor or triangle until such time as he will be capable of reading the angles while studying the dots for tonal values and densities.

Until the necessary experience is acquired, it is best to begin training with the checkerboard pattern, or the 50 per cent tint, and the center marks on the negative or positive.

### Using Tools and Eyes

For checking the angles, we will need a straight edge ruler and one 45 deg. and one 30-60 deg. triangle.

The straight-edge ruler is placed in alignment with or parallel to the horizontal center marks, which provides a guiding base for the triangle.

In checking the yellow negative, positive, printing plate or printed sheet, we place the base of either triangle against the straight edge, as indicated in Fig. 32C. Through the linen tester or magnifier, it will be observed that the square dots point vertically, in line with the 90 deg. side of the triangle. The small circle in each of the diagrams C to F in Fig 32 indicates the relative position of the halftone screen and its indicated setting by which the enlarged halftone dots are formed.

To check the red angle, we place the base of the 45 deg. angle against the straight-edge, then we place the 30 deg. triangle against the angle side of the 45 deg. triangle. If the dot angle for the red separation is correct, the dots will be in alignment with the 30 deg. side of the triangle as indicated in Fig 32D. The sum total of 45 deg. and 30 deg. are additive from the line 0 deg., and is read as 75 deg. in the first quadrant of the circle.

By placing the two triangles in the position indicated in Fig. 32E, we find that the total of 75 deg. is subtractive from 180 deg. in the second quadrant, giving us a reading of 105 deg. which is the designated screen angle for the blue color.

Placing the base of the 45 deg. triangle against the straight-edge, as illustrated in Fig. 32F, it will be seen that the halftone dots follow the line of the 45 deg. angle, If, during actual inspection it is found that the dots point in a different direction, then the separation for black has been shot at the wrong angle.

### Something to Remember

1. When possible, check angles with the 50 per cent checkerboard pattern tint.
2. Always read the angle direction toward the top of the image, never downward, or sideways.
3. The angle is always found by sighting through the dot from corner to corner—never by aligning the sides of the dots.
4. Heavy colors, like red and blue, and black, should always be 30 deg. apart.
5. If the heavy color angles are crossed at less or greater angles, a moire pattern will be formed which will ruin an otherwise fine job.
6. Study the copy. A moire pattern can also be formed by certain detail in the copy. Example: The herringbone weave in a suit of clothes will create moire in the reproduction if it is not previously noted. Another cause for moire is the halftone reproduction of a halftone illustration or copy.

(*To Be Continued*)

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Many of our production executive readers will respond to your Position Wanted Ad in the Classified Section of *Printing Equipment Engineer*. Rates on p. 71.

# Conference Dates

*(With Organization Names and Principal Officers)*

**American Photoengravers Association** — 1951 Convention, Netherland Plaza Hotel, Cincinnati, O., October 8, 9 and 10. W. K. James, President; Frank J. Schreiber, Executive Secretary, 166 W. Van Buren St., Chicago 4, Ill.

**ANPA Mechanical Conference**—1952 Conference, Fairmont Hotel, San Francisco, June 9, 10 and 11. Chairman of the Committee, L. J. Griner, Production Manager, Detroit *News;* Manager ANPA Mechanical Dept., Vernon R. Spitaleri, 370 Lexington Ave., New York 17, N. Y.

**Fifth District Craftsmen's Conference**—1952 Conference, Hotel Statler, Detroit, tentative dates June 20 and 21. President, Robert Knox, Michigan Typesetting Co., 457 W. Fort St., Detroit, Mich.; Secretary-Treasurer, Robert Wolf, Richardson-Taylor-Globe Co., 4501 Mitchell Ave., Cincinnati 32, O.

**Gravure Technical Association**—1952 Conference, Biltmore Hotel, New York, N. Y., January 1952, exact dates to be announced later. President, Len S. Pinover, Intaglio Service Corp., 305 East 46th St., New York, N. Y.; Secretary-Treasurer, J. E. Hazel, Room 4800, 30 Rockefeller Plaza, New York 20, N. Y.

**Great Lakes Newspaper Mechanical Conference**—1952 Conference, Hotel Statler, Detroit, January 20, 21 and 22. President, Joseph E. McMullen, Asst. Production Manager, Milwaukee (Wis.) *Journal;* Secretary, Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press;* Chairman, Mfrs. and Suppliers Committee, Edgar Flint, Howard Flint Ink Co., Clark Ave. and M.C.R.R., Detroit 9, Mich.

**Illinois Newspaper Mechanical Conference**—1951 Conference, Hotel Kaskaskia, LaSalle, Ill., September 22 and 23. President, John Barron, LaSalle (Ill.) *News-Tribune;* Secretary-Treasurer, Wilbur L. Augspurger, Peoria (Ill.) Newspapers, Inc.

**Intl. Assoc. Electrotypers & Stereotypers** —1951 Convention, Kenmore Hotel, Boston, Mass., October 23, 24 and 25. A. P. Schloegel, Executive Secretary, 701 Leader Bldg., Cleveland 14, O.

**International Association of Printing House Craftsmen**—1952 Convention, St. Louis, (hotel to be announced later), August 10, 11, 12 and 13. President, J. Homer Winkler, Battelle Memorial Institute, 505 King Ave., Columbus 1, O.; Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

**International Graphic Arts Education Association**—President, George J. Bilsey, East High School, Cleveland, O.; Educational Director, Fred J. Hartman, 719 Fifteenth St., N. W., Washington 5, D. C.

**International Typographic Composition Association** — 1951 Convention, Hotel Windsor, Montreal, Can., September 13, 14 and 15. President, O. B. Powell, General Manager, A-1 Composition Co., 155 E. Ohio St., Chicago; Frank M. Sherman, Executive Director, 1015 Chestnut St., Philadelphia 7, Pa.

**Iowa Daily Newspaper Mechanical Conference** — 1952 Conference, Blackhawk Hotel, Davenport, Ia., May 17, 18 and 19. President, Ross DeVine, Superintendent, Davenport (Ia.) *Times;* Secretary-Treasurer, Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald.*

**Kansas Newspaper Mechanical Conference** — 1951 Conference, Broadview Hotel, Wichita, Kan., September 15 and 16. President, Glenn Cummins, Wichita (Kan.) *Eagle;* Secretary-Treasurer, Larry Miller, 701 Jackson St., Topeka, Kan.

**Lithographers National Association** — Executive Director, W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

**Mid-Atlantic Mechanical Conference** — 1952 Conference, Bellevue-Stratford Hotel, Philadelphia, March 20, 21 and 22. Jointly sponsored by the New Jersey Press Assoc. and the Pennsylvania Newspaper Publishers Assoc. Conference Director, Theodore A. Serrill, PNPA General Mgr., 209 Telegraph Bldg., Harrisburg, Pa.

**Missouri Newspaper Mechanical Conference**—1951 Conference, Bothwell Hotel, Sedalia, Mo., October 20 and 21. President, Earl H. Barker, Composing Room Foreman, St. Louis (Mo.) *Star-Times;* Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index.*

**National Association of Litho Clubs** — 1952 Convention will be held in Philadelphia, hotel and dates to be announced later. President, Anthony Capello, 265 Rocklyn Rd., Upper Darby, Pa.; Secretary, Joseph H. Winterburg, Phillips & Jacobs Co., 620 Race St., Philadelphia, Pa.

**National Association of Photo-Lithographers** — 1951 Convention, Statler Hotel, Buffalo, N. Y., September 5, 6, 7 and 8. Executive Vice President, Walter E. Soderstrom, 317 West 45th St., New York 19, N. Y.

**National Printing Equipment Association, Inc.**—1951 annual meeting of the directors and members, Hotel Statler, Boston, October 26. President, R. Verne Mitchell, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O.; James E. Bennet, Secretary, 140 Nassau St, New York 7, N. Y.

**New England Mechanical Conference** — 1951 Conference, Statler Hotel, Boston, November 3 and 4. President, Howard E. Simons, Waterbury (Conn.) *American-Republican;* Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day.*

**Northwest Mechanical Conference** — 1952 Conference, Hotel Duluth, Duluth, Minn., September 20, 21 and 22. President, John Breen, Mechanical Supt., Duluth (Minn.) *Herald* and *News-Tribune;* Secretary-Treasurer, Ralph Carson, Dunwoody Industrial Institute, Minneapolis, Minn.

**Pacific Mechanical Conference**—1952 Conference will be held in conjunction with ANPA Mechanical Conference at Fairmont Hotel, San Francisco, June 9, 10 and 11. President, Clyde Bowen, *Wall Street Journal,* San Francisco; Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles *Daily News.*

**Printing Industry of America**—1951 Convention, Hotel Statler, Boston, October 24, 25, 26 and 27. President, Robert H. Caffee, President, Wm. G. Johnston Co., Pittsburgh, Pa.; James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

**Research and Engineering Council of the** *Graphic Arts Industry, Inc.* — President, Frank F. Pfeiffer, Reynolds & Reynolds Co., 800 Germantown Ave., Dayton, O.; Official Headquarters, Bernard Taymans, 719 Fifteenth St., N. W., Washington 5, D. C.

**Screen Process Printing Association** — 1951 Convention, Bellevue-Stratford Hotel, Philadelphia, October 21, 22, 23 and 24. President, John W. Key, Admiral Screen Print Corp., 627 W. Lake St., Chicago 6, Ill.

**SNPA (Eastern Div.) Mechanical Conference**—Chairman, L. H. Pickens, Mechanical Supt., Greenville (S.C.) *News-Piedmont;* Secretary, Tom Tanner, care SNPA, P. O. Box 1569, Chattanooga 1, Tenn.

**SNPA (Western Div.) Mechanical Conference**—1952 Conference, Houston, Tex., February 24, 25, 26, 1952. Chairman, Ralph Moffett, Mechanical Supt., Dallas (Tex.) *Times-Herald;* Conference Secretary, Mike Murray, 621 Texas Bank Bldg., Dallas 2, Texas.

**Technical Assoc. of the Graphic Arts** (TAGA replaces TALI) — Next annual meeting to be held in Cleveland, dates and hotel to be announced later. President, Paul W. Dorst, 3373 Morrison Ave., Cincinnati 20, Ohio; Secretary-Treasurer, Paul J. Hartsuch, Intl. Printing Ink Div. of Interchemical Corp., 161 W. Harrison St., Chicago 5.

## Harris-Seybold Calendar

Harris-Seybold Co.'s 1951-52 mid-year calendar features an oil painting reproduced by four-color lithography and entitled *Home-coming*, executed by New England artist T. M. Cleland. The twelfth painting done for H-S calendars by Cleland, it is the third in his series of illustrations of the contemporary American scene. The Brown & Bigelow Co. of St. Paul, Minn., produced the calendar on a two-color Harris 42 in. by 58 in. Offset Press. Fifty percent rag-content ivory stock was used for the piece which measures approx. 27 in. by 31 in.

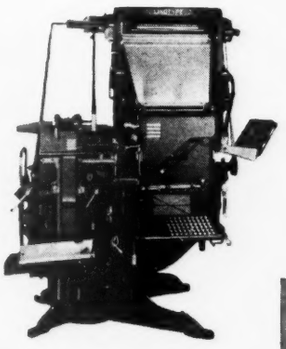
A limited number of the new July-to-June calendars are still available, as are lithographed prints suitable for framing of the Cleland painting. A copy of the calendar or the painting may be obtained by a written request to the Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, Ohio.

## Expands Facilities

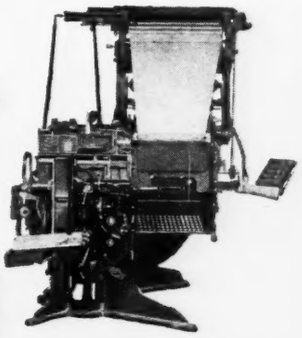
L. R. Johnson and K. N. Baronian of Central Typesetting Co., Los Angeles, have announced the removal of their plant to new and larger quarters and the acquisition of a complete Monotype plant. The new plant consists of two Intertype linecasting machines, three Monotype keyboards, four Monotype composition and display casters, and a material maker. The new plant is located at 1507 S. Maple Ave., Los Angeles 15, Calif.

RESEARCH FITS LINOTYPE TO TODAY'S OPERATING PATTERN

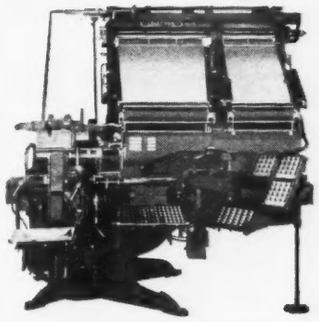
**Why should a new "job-engineered" LINOTYPE interest you?**



★ Single-Distributor Model 31 with one to four standard main magazines is often referred to as "the work horse of the composing room."



★ The Blue Streak Comet, the simplified two-magazine Linotype for easy maintenance and high-speed production of straight matter.



★ Wide Range Mixer Model 36 with two or four wide main and auxiliary magazines—the perfect ad machine.

**More and more publishers are telling us the answer is:**

# MORE PROFITS!

**COMPOSING-ROOM PROBLEMS** have been studied by Linotype for several years with the realization that their solution would help you bring production—and profits—to a new high. Now, the answer is here—in a complete new line of Linotypes! So, whatever your requirements, one of these machines is "job engineered" to earn you more money in your own composing room.

**TEXT OR STRAIGHT DISPLAY?** One of the six Single-Distributor Linotypes has the face range and magazine capacity to handle your particular job quickly and economically. If you want top speed . . . the Blue Streak Comet gives steady production at speeds up to 12 lines a minute when equipped with Teletypesetter. Or if you require large display as well as small text faces . . . the Wide Range Model 33 or 34 is the machine for you.

**MIXED OR FOOD-STORE COMPOSITION?** When it comes to production of complex text and display matter requiring faces from two or more magazines in the same line, the new Mixer Linotypes offer you a wide choice of capacities. Four models are available, from the Model 29 with two or four standard-width main magazines . . . to the Wide Range Model 36 with two or four extra-wide main magazines plus two or four auxiliary magazines for continuous keyboarding of any type face from 6-point text to 60-point display!

Your Linotype Production Engineer will be glad to help you select the machines that are job engineered to make **your** operating pattern a more profitable one. Just ask him! Mergenthaler Linotype Company, 29 Ryerson Street, Brooklyn 5, New York.

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THROUGH RESEARCH

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# Patents

## For The GRAPHIC ARTS

Covering patents issued July 3, July 10, July 17, July 24, July 31.

**Composing Room Equipment**

2,560,503. MOLD FOR TYPE CASTING MACHINES. A self-cleaning mouthpiece-mold assembly for type casting machines includes a mold having a type cavity, and a mouthpiece having openings for delivery of the metal to such cavity and air vents between the holes to release air from the cavity. The back face of the mold has undercut recesses therein which extend transversely from the mold cavity. The recesses communicate with the air vents and receive metal therein. The recesses are generally aligned with the air vents and are open to the mold cavity. Such metal forms a bond with the metal cast in the vents to remove such metal from the vents upon departure of the mold from the mouthpiece. Invented by John J. Christman, Trenton, and Frederick D. Klapproth, Pennsauken, N. J. Assigned to Pennland Printing Company, Philadelphia, Pa. Application December 2, 1948. 3 claims.

2,560,517. MATRIX DELIVERY MEANS FOR TYPOGRAPHICAL LINE COMPOSING MACHINES. An improved conveyor construction for typographical machines is provided in which, in the delivery of matrices bearing a photographic type character on a surface thereof by which the elements are supported flatwise for delivery in upright position to a line composing station, the element supporting surface of the conveyor belt is flexed laterally to an outwardly concave form at the point where the elements while moved by the conveyor are deflected to an upright position. Invented by Herman R. Freund, Brooklyn, N. Y. Assigned to Intertype Corporation, Brooklyn, N. Y. Application December 3, 1948. 6 Claims.

2,560,648. MOLD COOLING SYSTEM FOR TYPOGRAPHICAL CASTING MACHINES of the Mergenthaler type provides the air discharge nozzle with a hose connecting extension mounted on a stationary part of the machine and formed to break and make connection automatically with the nozzle as the mold slide is moved forwardly by hand beyond its normal operating position and later restored to that position. This is accomplished by using a sliding fit between the nozzle and its extension to permit them to be moved into and out of mating relation. The bore of the air discharge nozzle is greater than that of the hose connecting extension so that the full amount of air will pass to the nozzle in all positions of the latter during normal operation. Invented by John H. Hilpman, Springfield, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application February 4, 1948. 2 Claims.

2,561,216. STENCIL CUTTING DEVICE FOR PHOTOCOMPOSING MACHINES. Photo-composing apparatus produces a photographic image of a line of printing, without use of actual type, by individually photographing the character onto a film advanced intermittently. Each film movement corresponds to width of last image photographed thereon and film movements are controlled by a typewriter-like carriage with a number of movable stops cooperating with a fixed stop, the extent of each movement being limited by the number of movable stops moved out of alignment with fixed stop, which is governed by width of character next to be photographed. Upon movement of type hammer which determines extent of next movement of carriage, face of type hammer is automatically photographed onto film. These operations are done automatically by means of a stencil cut on a separate unit which can justify the lines. In cutting stencil the type hammers are manually actuated. Invented by Maurice E. Miller, Addison, N. Y. Unassigned. Application December 15, 1948. 4 Claims.

2,561,813. FRAME FOR LETTER BLOCKS includes a frame having side and end members and a series of guide bars. The end members and guide bars are shaped for detachable interlocking at both ends or sides of the frame.

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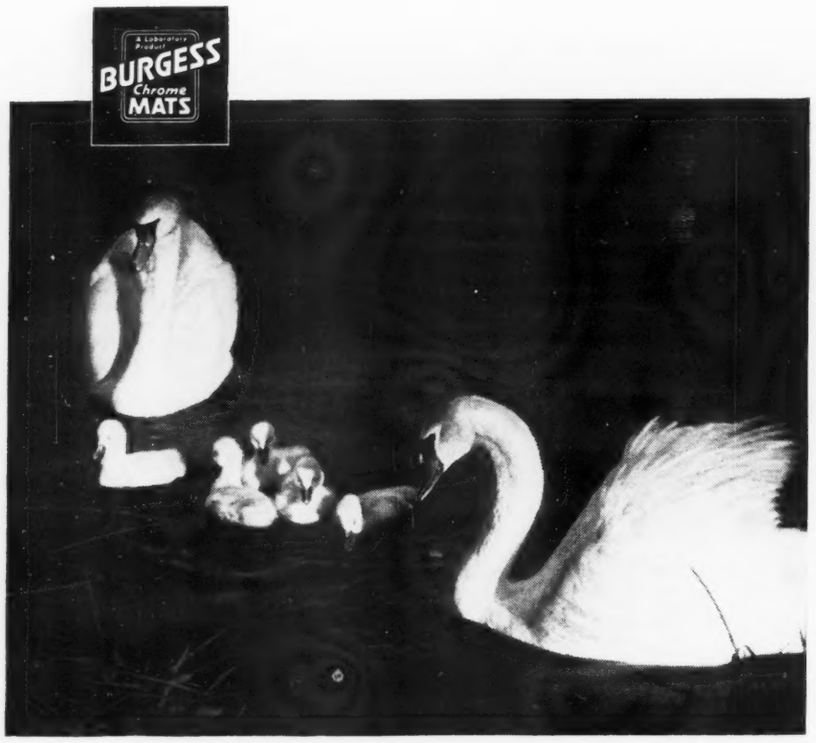


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2,562,737. THE PERFORATORS AND COUNTERS are used for preparing a perforated strip for the automatic control of composing machines of the line-casting type. The keyboard includes key levers, like a typewriter's, that operate through a permutation selector mechanism to position permutably a series of code discs of a selector to select one of a circumferentially arranged series of rods. A counting barrel is subjected to continuous torque and has a circumferentially arranged series of rods. An operated slide cooperates with the selected rod to determine degree of rotation of counting barrel. Rotation of latter rotates a spiral gear to impart variable motion to a matrix pointer associated with an indicating dial. The variable motion may be adjusted for different fonts of type by imposing an interchangeable code bar unit between key levers and selector mechanism. Counting code bar unit is shifted from lower case to upper case positions by a power operated shift device under control of suitable key levers. Invented by Theodore I. Przysiecki, Park Ridge, Ill. Assigned to Teletypesetter Corporation, Chicago, Ill. Application August 25, 1949. 5 Claims.

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**Feeding, Folding, Delivery**

2,561,070. SHEET COLLATING MECHANISM. A collating mechanism is provided by which signatures of different sizes can be dealt with for automatic collation in the correct sequence. Mechanism includes an endless conveyor which is mounted for movement across the line of delivery of the signatures and comprises a series of receptacles for receiving the signatures, means for adjusting the pitch of the receptacles and means to advance the conveyor intermittently in step with the delivery of signatures. The advancing means is adjustable to the different sizes of signatures. Invented by Thomas E. Phythian, Headingly, England. Assigned to R. W. Crabtree & Sons Ltd., Leeds, England. Application May 8, 1946; in Great Britain May 11, 1945. 6 Claims.

2,561,223. RECIPROCATING SHEET FEEDING DEVICE operates to automatically assemble, in proper order and matching engagement, printed sheets initially disposed in separate stacks. Machine is useful for assembling the sheets of small newspapers, folders, pamphlets, etc. It comprises an endless conveyor, and a plurality of tables mounted lengthwise of the conveyor and adjacent the conveyor. Each table supports a stack of printed sheets, and sheet feeding means including a friction pad for engaging top sheet of a stack, operates to feed individual sheets from the stacks in timed relation to movement of the conveyor. Invented by Orville K. Peckham, Sonora, Calif. Unassigned. Application February 17, 1947. 3 Claims.

2,562,026. AUTOMATIC WEB GUIDING APPARATUS provides for the accurate edge alignment of a moving web of paper in either a winding or an unwinding operation in order to accurately align the material with respect to a receiving roll. The mechanism compensates for any lateral deviation of a moving web through a series of aligned apertures in an orifice control unit cooperating with the web. A shaft is movable by a vacuum mechanism and is rotated in one direction or the other in order to shift the moving web and bring about accurate travel thereof. The apertures of the control unit provide an efficient actuation of the guiding mechanism. The unit allows maintenance of a neutral position when the web is traveling in a true path. Invented by Irwin L. Fife, Oklahoma City, Okla. Unassigned. Application June 7, 1946. 6 Claims.

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**Miscellaneous**

2,561,263. PRINTER'S CALCULATOR AND CIRCULAR SLIDE RULE. The device will show the space within which a given typed text can be placed using type of a predetermined face and point. It includes a transparent scaled sheet having numerical indicia indica-


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tive of the number of type characters per unit area. A disc rotatable in the scale has indices for cooperation with the first scale for determining proportional members of type characters in proportional areas. An inner logarithm scale on disc has numbers indicative of the average length of type in a given area. A second rotatable disc concentric to first has a logarithm scale cooperative with the second logarithm scale. A third concentric disc is rotatable on the sheet and has a logarithm scale cooperating with the last-mentioned logarithm scale, for calculating the number of selected type characters for a selected area proportioned to the number of type characters in a given area. Invented by Foster A. Babcock, Philadelphia, Pa. Unassigned. Application May 27, 1948. 3 Claims.

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**Plate Making**

2,562,565. ELECTROTYPE STRAIGHTENER WITH ROCKING PLATE SECTIONS. This device, known variously as a "hurdy-gurdy", "parallelizer", "masher", and the like, is used for straightening electrotypes. Rocking plate sections of the novel device direct the straightening blow to the high spot of the electrotype being straightened and the device adapts itself to the unevenness of a composite electrotype. Invented by Albert W. Merk, Cincinnati, Ohio. Unassigned. Application March 28, 1947. 5 Claims.

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COMBINO—An extremely durable clean printing laminated blanket. Gauges .062", .083", .093".
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TOP Drawsheet is firm, durable, economical and of long life. Gauges .016", .025", .030".
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IMPROVED SATISFACTION — A fabric impregnated with "Neoprene" and coated with "Calvaprene." Gauges .024", .026".
STERLING — The latest plastic drawsheet. Gauge .025".
CUSHION CORK*—A highly resilient underpacking. Gauges .059" to .085".
TINGUCORK*—Much firmer than "CUSHION CORK" and preferred where precision plates are available. Gauges .032", .055" to .086".
KORKER* — Under blanket for older type presses or where an unfavorable mechanical condition exists. Gauges .058" to .070".
FOUNDATION — A firm, durable oilproof under packing laminated by duPont with "Neoprene". Gauges .032", .040", .053" to .085", .120"".
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2,559,915. HALF-TONE SCREEN DETERMINER consists of a flat plate having a straight edge, the plate having a transparent portion and an opaque portion surrounding the transparent portion. In the transparent portion there is located a group of tapered radial opaque lines tapering toward a common point of radiation and spaced equi-distantly. The center line of the group is disposed at an angle 45 degrees with respect to the straight edge. The plate has a numerical scale bordering the transparent portion. The scale cooperates with the lines when the plate is laid flatwise on a half-tone, the scale then indicating the number of lines per linear inch of the screen. Invented by Arthur H. Gaebel, Larchmont, N. Y. Unassigned. Application December 28, 1949. 3 Claims.

2,560,696. PHOTOPRINTING APPARATUS, for newspaper work, includes provision whereby a cylinder is mounted on a hollow shaft between a pair of special cylinder engaging heads. The cylinder heads are joined with a source of vacuum supply, and uniform distribution of vacuum is used to draw the film negative or positive securely against the cylindrical printing surface. By arranging an exposure hood over the top half of the cylinder and by uniformly rotating the cylinder with respect to the hood, a prescribed exposure may be produced which will result in a fine quality printing image on the surface of the cylinder. Vacuum is applied during rotation of the cylinder in an effective and convenient manner. Cylinders of different diameters and different lengths are accommodated and baffles in the light hood prevent unwanted distribution of light which might result in undercutting even with the film negative or positive closely adhered to the cylinder. Invented by William C. Huebner, New York, N. Y. Unassigned. Application December 8, 1948. 4 Claims.

2,561,169. AUTOMATIC DEPTH CONTROL FOR PRESSES. Depth control apparatus is provided for power presses used in making electrotype molds from sheets of thermoplastic resins, whereby the depth of the impression transferred from the printing form to the plastic sheet, or the thickness of the sheet itself, may be controlled within uniform limits heretofore unattainable. In an electrically-controlled fluid pressure-operated press, the invention provides a switch for operating the fluid pressure controls; an actuator for tripping the switch when the plastic sheet has been molded to proper thickness or when the proper depth of impression has been made therein; and a presser foot responsive to the pressure exerted by the platens of the press on the material therebetween for automatically causing the actuator to engage the switch. Invented by George B. Bickelhaupt, Jr., Minneapolis, Minn. Assigned to The Monomelt Co., Inc., Minneapolis, Minn. Application May 21, 1948. 10 Claims.

**Printing Presses and Equipment**

2,560,903. WAVE GUIDE DIELECTRIC HEATING APPARATUS. A web of paper bearing wet printing ink is passed through the apparatus to dry the ink. It comprises upper and lower half-wave-guide structures, at least a portion of the adjacent surfaces of

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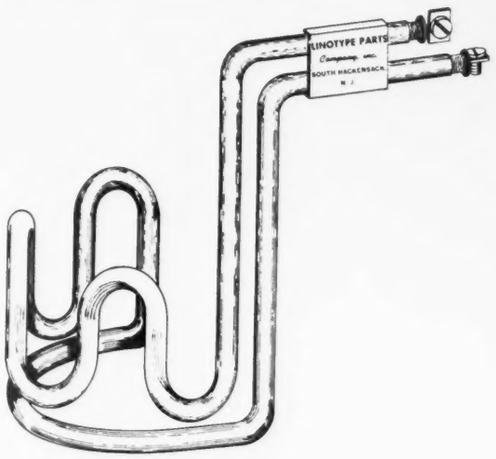


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which are spaced from each other so as to lie parallel to each other. The web is passed through this space. High frequency electromagnetic energy is supplied to the structures. Invented by Karl J. Stiefel, deceased, by Hedwig G. Stiefel, executrix, Boston, Mass. Assigned to Raytheon Mfg. Co., Newton, Mass. Original application September 20, 1946 continued and this application August 27, 1949. 6 Claims.

2,559,723. SIGNALING COUNTER is for use on printing machines to automatically count a predetermined number of sheets as they come off the press, then sound a signal so that the batch of counted sheets may be padded, packaged or marked. The signaling apparatus may comprise a plurality of switches mounted on an insulating support and secured to the counter in such fashion that the switches are disposed in operative relation to the several indicator wheels. Each indicator wheel has a cam which is adapted to close the switch corresponding thereto at a predetermined position of the indicator wheel. The switches are connected to an electric current and to signaling means which is actuated when a predetermined sheet count is reached. Invented by Anthony R. Litrell, Grant City, N. Y. Unassigned. Application May 21, 1947. 6 Claims.

2,559,533. PRINTING PLATE POSITIONER guides printing plates to a precise predetermined position on a printing press cylinder for attachment thereto. A guide mounting is located for movement parallel with the axis of the printing cylinder and can be brought to any desired position axially of the cylinder. Movable on the guide mounting is a member held in predetermined angular relation to the cylinder. The member is adapted to move toward and away from the cylinder surface and to carry a printing plate or facsimile thereof. In this way a plate to be attached can be guided to and secured in any predetermined position upon the cylinder. Invented by Joseph S. Daniels, Rhineland, Wis. Unassigned. Application November 22, 1944. 3 Claims.

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2,558,787. HARDENING OF PRINTED INK FILMS is speeded up on high speed rotary presses by moistening the surface of a fibrous surface of web being printed immediately before it is printed. The web is moistened with a solution containing coloring material, a water insoluble binder, and a water miscible solvent. The web is then printed while the moisture is at the surface; then moisture at the imprinted portions of the web is evaporated to make it available for the thorough hardening of the ink film. Invented by Alfred F. Schmutzler, Teaneck, N. J. Unassigned. Application April 4, 1945. 1 Claim.

2,558,900. ELECTROSTATIC PRINTING METHOD AND APPARATUS improves electric printing by bringing a moving web into very light contact with an inked design-bearing cylinder. This is accomplished by using a rotating type cylinder having a design, means for inking the design and means electrically grounding the cylinder. A guide cooperates with cylinder and a web is moved into contact with the guide and in non-pressure contact with the inked design of cylinder, an electrical field extending beyond the guide to cylinder to transfer ink to web. The guide is formed of an insulating material and has spaced legs, one of which contacts web after latter has passed out of contact with the inked design while other is out of contact with the web. The free end of an electrode is located between the legs. Invented by William J. Hooper, Elsah, Ill. Assigned, by mesne assignments, to William C. Huebner, New York, N. Y. Application March 26, 1945. 2 Claims.

2,558,901. ELECTRIC PRINTING SYSTEM of the type described in patent No. 2,558,900 also arranges for lightly contacting the paper web with an inked roller and for transferring ink to the web by passing a high amperage, low voltage current through the ink and sheet at the printing points. The arrangement provides a first rotating cylinder bearing an inked design, means for moving a paper web closely adjacent the inked roller, and a second rotating cylinder. This latter cylinder has a conductor in engagement with the side of web opposite to that which receives an inked impression. Current is passed through the sheet and the ink in contact with same. Invented by William J. Hooper, Elsah, Ill. Assigned, by mesne assignments, to William C. Huebner, New York, N. Y. Application April 27, 1945. 5 Claims.

2,561,018. GEARED ADJUSTMENT MEANS. An adjustable printing press cylinder may be quickly secured to, and released from, its assoociated drive gear and, when released, may be turned in either direction to any desired ex-

tent. It may be turned through a complete rotation, if desired, and fine adjustment may be effected. A ring gear is provided and can be clamped to the body of the cylinder by an annular clamp member concentric with the gear and spaced radially inward therefrom. Securing members pass between ring gear and clamp member and are connected to the body structure of cylinder for movement toward and away from the latter, whereby clamping and releasing operations may be effected with facility. Ring gear comprises an internal gear adapted to mesh with an adjusting pinion of an adjusting tool which turns cylinder in either direction relative to ring gear. Invented by H. W. Gegenheimer, Mystic, Conn. Assigned to Electric Boat Company, Groton, Conn. Application August 17, 1948. 11 Claims.

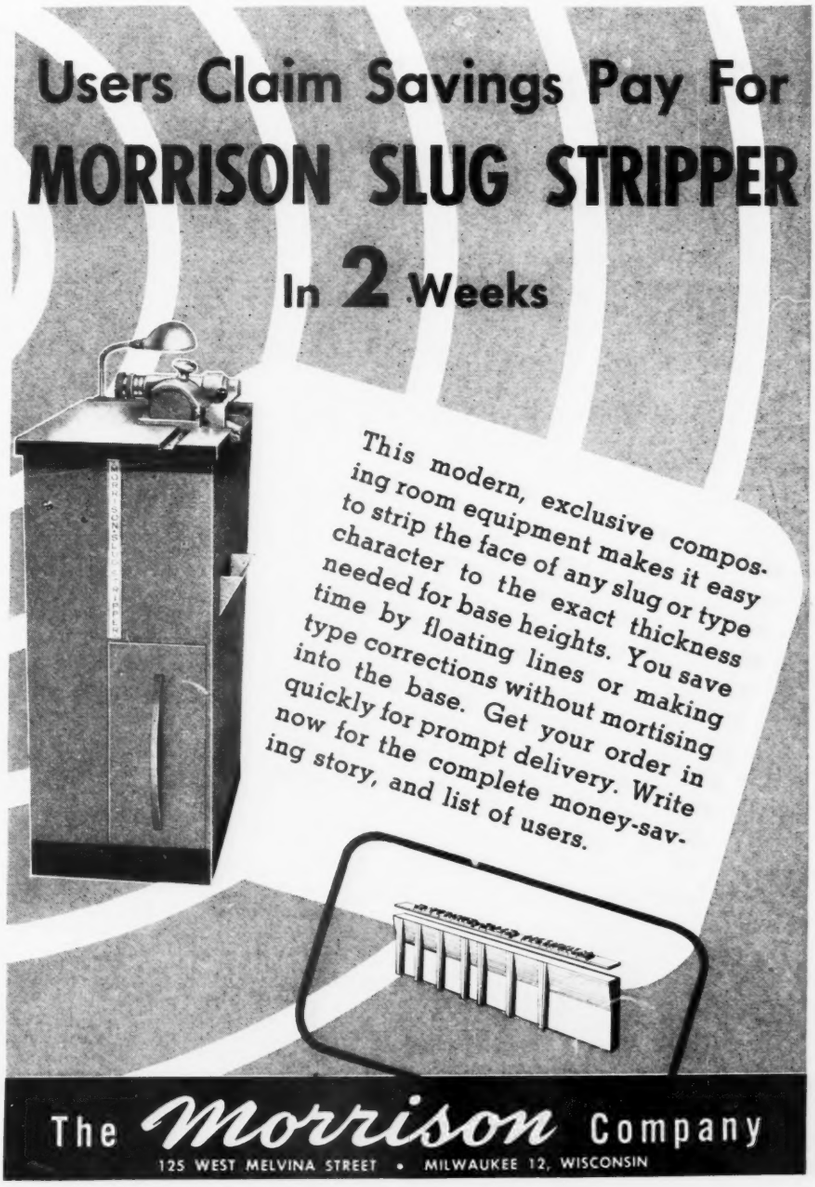
2,561,115. MACHINE FOR AND METHOD OF REGISTERING PRINTING PLATES. This machine is provided for registering color printing plates that are to be subsequently removed for use in multicolor printing presses. The printing plates are secured to backing sheets and removably fastened on two parallel cylinders arranged side by side in the machine. The invention also includes a mirror unit for use in registering one set of color plates with their other set of coacting printing plates. The cylinders can be rotated step by step in unison in the same direction for permitting registration of different pairs of coacting plates carried by cylinder backing sheets. A third cylinder beneath the two plate carrying cylinders is adapted to have a proof sheet attached to it; third cylinder may be rotated in unison with the first two cylinders. Invented by Earle L. Harley, Brooklyn, N. Y. Unassigned. Application January 4, 1949. 5 Claims.

2,561,373. INKING MECHANISM is of the type which is movable into and out of cooperative relation with form rollers of a press. It comprises a support, form roller means carried thereby and removable therefrom, means for delivering ink to the form roller means and a track on which the ink delivering means is movable into and out of location adjacent the form roller means when carried by the support. There are other means movable transversely of the track for positioning the ink delivering means for movement along the track. An operating member is shiftable to engage the form roll means and remove it from the support upon operation of the said transversely movable means. Invented by Raymond K. Holtz, Mount Lebanon, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application September 10, 1948. 12 Claims.

2,561,399. INKING MECHANISM of the "rollaway" type for printing presses includes a support carrying form rollers. Ink is delivered to the form rollers by mechanism which is movable into and out of location near the form roller when carried by the support. The support may be in the form of bearings in which the form rollers are mounted and from which the form rollers carrying the ink delivering mechanism may be removed when latter is to be moved away from press. Invented by Gordon Montgomery, Wexford, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application September 10, 1948.

2,561,423. INKING MECHANISM is similar to that covered by patent No. 2,561,399 in this report and is of the "rollaway" type. The present structure obviates the problem incident to clearance between the roller shafts and the means for lifting the rollers out of their bearings. Such lifting means may have yokes or sockets of any desired size, eliminating the danger of the form rollers becoming dislodged from the narrow channels in which they are held. Such form rollers are moved, according to the present patent, in a direction generally longitudinally of the form rollers, or transversely of the inking mechanism. Invented by Joseph Sinkovitz, Pittsburgh, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application March 30, 1949. 14 Claims.

2,561,908. BED AND CYLINDER MULTICOLOR PRINTING PRESS provides a plate feed mechanism in which the plates are positively fed along guides arranged in spaced vertical planes or runs and are lowered from the upper run after the printing operation to the lower run and then raised from the lower run to the upper to repeat the printing operation. A complete set of plates may be deposited on the upper run of the conveyor to receive five colors while another set may be disposed on the lower run to receive five colors. For one complete run of the plate feeding mechanism, two sets may be printed, thus permitting printing of two color jobs in the machine at one setting of the same. In-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vented by Leslie W. and Carlton C. Claybourn and Paul R. Franzen, Chicago, Ill. Assigned to L. W. Claybourn, Inc., Chicago, Ill. Application May 16, 1949. 2 Claims.

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## Tribune Production

(Continued from Page 40)

fabric. Each of the Calrod heaters is controlled by a separate switch. If a fuse blows on any of the heating units, a red light on the fuse panel will go out, showing at a glance which fuse block is out. The circuits are arranged, too, so that if the metal pot heating circuit goes out, a siren will sound so that immediate attention can be given to element replacement.

Two Wood Heavy Duty Pony Autoplate machines are used for casting page plates. Other new equipment consists of a Big Chief Flat Casting and Remelting Furnace described elsewhere in connection with this article; a Hoe combination saw and trimmer, an Ostrander rotary flat shaver and a Wesel flat router.

### Flat Casting and Pig Remelting

A number of operations incidental to stereotype flat casting and pouring Margach pigs for the line-composing and Monotype metal feeders are concentrated in this one mechanism (Fig. 2). This equipment is located in the Stereotype Dept. of the South Bend (Ind.) *Tribune*. The Big Chief Remelting Furnace is of 4800 lbs. capacity. It is electrically heated. A pyrometer is used to indicate metal temperature. The Dumperin device (left) is used to automatically lift a truck full of line-composing machine slugs and dumps the slugs into the pot. After the load has been discharged into the pot, the empty truck is lowered to the floor. The page size Goss 69E casting box is mounted on casters to permit movement to and from the metal pouring spout. Flat casts are poured automatically by an International Electro-Pressure Automatic Metal Pump. The pump is of the impeller blade type—it turns the blades at 1725 r.p.m. The ½ h.p. motor and pump are mounted at an angle. The motor is visible above the flat casting box. The spout is electrically heated. Two double eight pig molds (right) for casting Margach type pigs are water cooled. Metal for the pigs is drawn from a bottom-pour swingable spout. Operator is controlling flow of metal to pig molds by means of the hand wheel at right. Smoke and fumes from melting metal are drawn off through the duct at the top of the furnace.

Stereotype Supt. Rager states that 95% of the stereotype casts are of the shell variety. The casts are made with allowance of 0.010 in. for shaving. All shell casts are mounted on Monotype base.

### Beams for Maintenance Work

Another note with respect to simplifying the inevitable maintenance work is interesting. In Fig. 6 are shown two I beams, 4 in. by 8 in. and of suitable length, are mounted on the ceiling over the regular Wood 10T Obround metal pot and over the Big Chief 4800 lb. flat casting and remelting furnace. Each beam is equipped with a Budgit trolley. A chain fall is used for lifting pumps and the pots. When a pump is lifted it is rolled on the trolley to one side of the furnace and is lowered to the floor for cleaning.

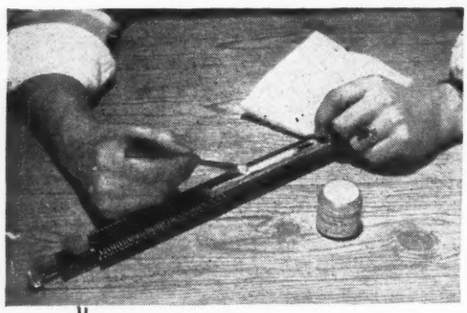
### Tribune's Pressroom

As is usual in the newspaper printing plant, the press is the largest and most ponderous equipment item. The pressroom is in charge of Carl Schafer who supervises a crew of 15 men. The *Tribune's* Goss Headliner press consists of nine 16 p. units with two folders joined in a straight line. The press is 91 ft. long, 25 ft. high, and 9 ft. wide. The press is powered by motors installed by Cline Electric Mfg. Co. The Collmar Corporation's sensitive


# Contrast Your Mats this Safe Easy Way

**ERRORS COST** from 20c to 75c each. The simple Linotape Dri-Stain Process makes mat faces black with white or colored reference marks. These contrasted mats reduce errors — save eyes, time and money.

The Dri-Stain Process is *safe*. No acids or caustics used. Unconditionally guaranteed not to harm mats.



**SIMPLE as ABC.** Your dealer can do it—or you can do it. And at small cost. Top photo shows how a strip of dry tape (Linotape) is laid on a clampful of mats. The clamp is heated, faces turn black. Then inlay is brushed in reference marks, the surplus wiped off and the mats are ready to go back in the machine.

**WEARS and WEARS.** Find out now about the simplicity and cost of this remarkable process. Send coupon today.

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Gentlemen: Please rush your informative folder, "How to Contrast Mats with Dry Tape."

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**LINOTAPE PRODUCTS CO. 744 W. Colfax, Denver, Colorado**

Cooksey web detector controls have been installed for automatically stopping the press in case of a web break and also prevents the damaging paper wrap-arounds on the cylinders. Plates are delivered by Cemco or Capital plate conveyor from stereotype to pressroom. Two Cutler-Hammer conveyors bring papers from press to the mailing room. The press is mounted on steel springs having a minimum tensile strength of 90,000 lbs. per sq. in. for vibration elimination purposes, especially in connection with the *Tribune's* WSBT radio station in the same building. The plate and impression cylinders rotate at approx. 325 r.p.m. Each revolution prints two papers on straight runs. Top press speed is 39,000 copies per hr., but the usual printing speed is 38,000 papers per hr. On double plate runs 56 pages may be printed in two or three sections and on collect runs 64 pages can be printed. Eight main electric motors have a combined total of 625 h.p. While the press is in operation, 57 motors are used for various duties.

Color can be printed on 16 pages in one issue. Seven of the nine units are built to print color. These units print the *Tribune's* four color Sunday comics and r.o.p. color advertisements.

Future expansion has been made possible in the new building by providing space for seven additional 16 pages press units and a pair of folders.

## *Mailing Room*

FOREMAN Don Holstein still is thrilled with his recently mechanized mailing room. This room, by comparison with the old hand work mailing room, bears about as much resemblance as does a newly minted silver dollar to a currency dollar six months in use. The newspapers come to his department via Cutler-Hammer conveyors from the presses and are carried along a Jampol feeder belt and table (Fig. 8). The mailing room was engineered by Howard Jampol of The Jampol Co. The Milwaukee (Wis.) *Journal* feeder mechanism feeds the bundles of papers into a Signode-Parker wire tying machine. After being ejected from the tying machine, the bundles are automatically conveyed to the dock, and then to the waiting trucks. The papers are diverted from the conveyor belt on the loading dock into the trucks by means of two deflector conveyors.

## Craftsmen

**(Continued from Page 31)**

profitable investment. In some cases, he said, larger or smaller equipment may be needed after an analysis has been made. Nelson stressed care and oiling of equipment. He cited one plant in which every machine in the place was wiped clean when the plant was shut down at the end of the week. By this plan, for instance, the pressman noticed the little tell-tale signs of wear in machine parts while wiping the press. His closing advice was: "For goodness sake, when a new press has been installed, don't get wrench-happy."

### Keep Delivery Dates

Ernest Rapa, Production Mgr., Sutherland-Abbott Advertising Agency, discussed the breaking of promised delivery dates. He said no one likes false promises on delivery from the printer. Another source of irritation is slow pickup after a phone call. When a job involving several suppliers is ready for production, he advised getting together with the advertiser, the agency production manager, the printer, engraver, and electrotyper.

### Send That P.O.

Hector McDonald, Proprietor of the Bay State Bindery, said that one of his greatest problems is the absence of a numbered and completely filled out purchase order when the customer sends work to his plant. Quite often there isn't even an identification on the packages when received in the plant. A completely filled out purchase order reveals discrepancies right away if there are any before it is too late to rectify them. McDonald related one instance in which a customer sent in 2000 sheets of a four-color process job to be folded and bound. The job came into the plant incognito without identification of any kind. Telephone conversations to various plants failed to

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**S-T-R-E-T-C-H**

● "Stretch" in zinc occurs when the sheet is "burned in." Like all metals, zinc is made up of a mass of crystals. In the rolling process these microscopic crystals are fractured. But zinc differs from other metals in one important respect. When zinc is heated above 300°F, the crystals grow together and in so doing, actually grow larger. A sheet of zinc after "burning in" is larger than before. The maximum growth of the crystals always occurs in the direction in which the sheet is rolled.

One of the many advantages of the Imperial Register Redibak process is that in applying Redibak after rolling, Imperial Zinc is heated to a point where objectionable stretch is prevented.

Users of Imperial Zinc avoid size variations or "stretch" as they "burn in" their flats.

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turn up identity of the plant sending the work to the bindery. The job was put in storage. Three years later it was thrown away.

## *Offset Clinic*

CHAIRMAN of the Offset Clinic on Tuesday afternoon was Intl. Technical Commission Chairman Thomas P. Mahoney, Plant Supt., Regensteiner Corporation, Chicago. Mahoney introduced the first speaker on the program, J. Tom Morgan, jr., President of both the Litho-Krome Co., Inc., and Commercial Printers, Inc., of Columbus, Ga., whose talk was entitled *Lithography and Contemporary Color Reproduction.* Morgan embarked upon his discussion by telling his audience how photolithography came into being. He said that the marriage between photography and lithography brought the latter from an art to a practical commercial method of reproduction.

### Color Should Be More Faithful

Concerning himself with the quality of color reproduction, the speaker admitted he was ashamed with the vast majority of the color work produced by all printing color processes. He continued: "With all the progress we have made in production and reproduction methods and equipment I feel that we, as an industry, are behind the times. We haven't made the advances we should have made. Color reproduction should be much more faithful and I think the American public is beginning to realize it might be."

He compared the results obtained with color in both the movie and television industries with that obtained in the Graphic Arts. He asked the Craftsmen if they stopped to compare these results with their color reproduction and if they realized that this method of reproduction is in competition with theirs.

Again Morgan asked, why can't a reproduction be made every time that looks like the original? Why does a beautiful original often make an unbeautiful reproduction, and why does it take more than four colors to do it? He revealed that the biggest problem boils down to lack of control in the camera, lack of control in color reproduction, and lack of control on the press.

The speaker stated that there was an obvious need to establish control methods. He described these controls as, "a pair of scales for the cameraman to weigh negatives, a ruler for the color corrector to measure color tones, and a yardstick for the pressman to use when running his ink."

He said that offset lithography is the one of the three methods of color reproduction which affords the fullest opportunity for fidelity of reproduction and named the following four reasons for this:

(1) Offset will print on fancy finish papers because it is a planographic process and it alone can effect reproductions on rough surfaces.

(2) New improvements in offset inks and platemaking procedure have made it possible to print by offset with a snap equal to any method of reproduction. Offset lithography is now versatile so that you have either softness or snap.

(3) Offset lithography can print any size from a postage stamp to full coverage of the sheet. Size is limited only by the size of the press itself.

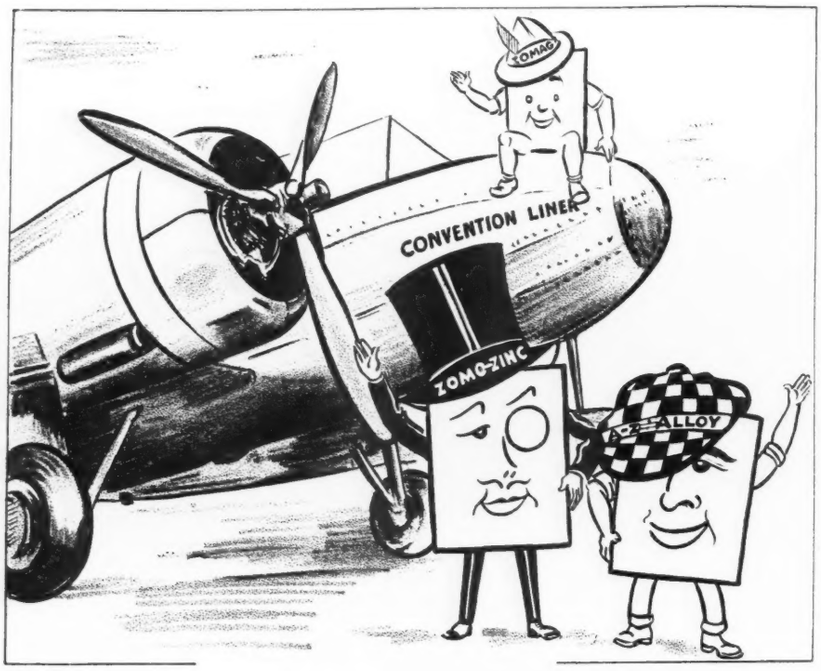
(4) Offset makes the best use of photography. It will print what is on the photographic positive. Superimpose these assets on the active use of proper controls, and you have a color reproduction process with a fidelity potential second to none, he asserted.

### Modern Trends in Lithography

The next speaker on the program, Dr. Paul J. Hartsuch, Lithographic Consultant, International Printing Ink Div. of Interchemical Corporation, gave an interesting talk on *Modern Trends in Lithography.* "Lithography," he said, "would not be moving ahead as it is today, if it were not for many improvements which have been made by cooperative and private research work. These improvements have covered the whole field of lithography—photography, platemaking, press, paper and ink."

### Masking Methods

Of these developments reported by Dr. Hartsuch, he said that in the field of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photography, masking methods have reduced hand correction considerably and have resulted in more faithful reproduction of the original art work. He told of the development of colored fluorescent lamps, to replace arc lamps and colored filters, in making color separations. It is claimed, he said, that the separations retain more detail and the highlight detail doesn't burn out when exposed for the shadows. The development of motor-driven arc lamps has improved the steadiness of light intensity, both for camera work and in platemaking.

A new method is now available, he continued, for making improved halftones with the Kodak Magenta Contact Screen. This involves exposure of the copy with white light, using no filter, followed by a flash exposure with a small yellow light.

Color separation negatives are now being produced by "giant electronic brains," such as the Time-Life electronic scanner.

In the field of line copy preparation, such machines as the Intertype Fotosetter are being used for the production of script directly on film, according to Dr. Hartsuch. He told of some of the work carried on in the research laboratory of the Lithographic Technical Foundation. This included the development and improvement of pre-Cronak and post-Cronak on zinc plates, post-Brunak on aluminum albumin plates, cellulose gum as a superior desensitizing gum, soybean protein as a substitute for albumin, and the LTF Sensitivity Guide for platemakers.

### Vapor Blasting for Grain

The speaker said that vapor blasting is a new way to produce a fine, even grain on a lithographic printing plate. The plates are fastened on a cylinder which revolves. At the rear of the apparatus is a gun which shoots the slurry abrasive and water onto the plate. The gun travels slowly from one end of the revolving plate to the other, thus producing a grained plate in 6 or 7 min.

He told of a few plants which are running plates made of such metals as stainless steel and Monel metal. He said that these metals are strong and do not break easily at the grippers. They are also hard, so that there is little danger of losing the grain on the plates. Runs as high as one to two million have been reported made on these plates. He noted, however, that a disadvantage to these plates is that they tend to buckle considerably after they are grained. This necessitates graining on both sides or putting them through a 3-high set of steel rollers, in order to secure a nearly flat plate. Then the metal is heavier than zinc or aluminum, and the springiness in the metal makes it more difficult to bend into the grippers.

The IPI Lithographic Consultant reported that some bi- and tri-metal plates for lithographic printing have printed editions of from three to seven million impressions, and runs of a million impressions are common. These multimetal plates include the IPI Tri-Metal plate, the Time-Life or Lithure plate, and the Aller plate.

Another litho plate which the speaker explained is one developed by the Colloid Litho Plate Co. With this plate, a special type of plastic coating is applied to black iron plates and the coating is baked in a regular decorating oven. The resulting surface is water-receptive. An image is then applied by a regular albumin process.

He also mentioned the pre-sensitized litho plates which are available for office duplicators and small offset press sizes. Of these, he said you can have a plate on the press within five minutes after you have started to make it.

Interest continues to be shown in the field of dry offset, he stated, and if such plates ever become common, it will "surely be a wedding of lithography and letterpress." Better registration, stream feed, higher speeds, and better metals for dampening and form rollers were among the improvements in press equipment mentioned by Dr. Hartsuch. Many lithographers, he continued, who thought it impossible a few years ago to print from web offset presses, are now printing from two, four, and eight unit web fed offset presses.

The examination of press sheets by night crews has been improved considerably by the use of a booth containing different colored fluorescent lamps. This method was developed by General Electric Co., in cooperation with Copifyer Lithograph Corp. of Cleveland.

Through research work carried out by LTF, a blanket thickness gauge has just


DO THE WORK OF HOURS *in Minutes!*

SLASH YOUR PRINTING COSTS WITH THE

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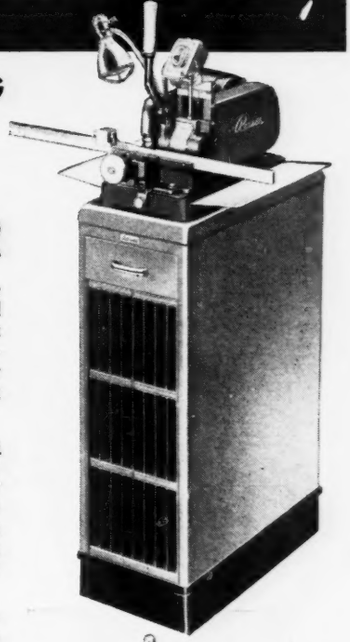
POWER MITERER



If you need miters in either small or large quantities, no other machine nor method can turn out anywhere near as many perfect joining miters so quickly from strip material. That's how the Rouse Power Miterer can slash your printing costs by doing work in minutes that now takes you hours.

A Rouse Power Miterer won't cost you one cent! Printers the world over say that money paid for a Rouse Power Miterer quickly comes back through tremendous savings in expensive time. After getting your money back, you'll start collecting daily dividends from permanently lower operating costs.

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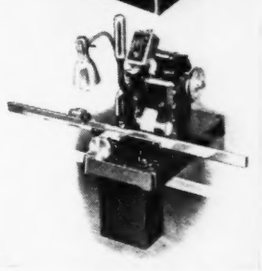
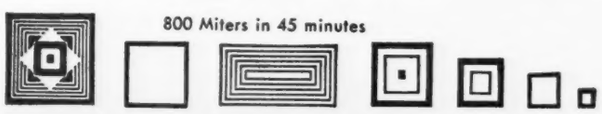


800 Miters in 45 minutes



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been made available to lithographers, he said. The use of such a gauge should help the pressman to pack his blanket properly.

### Paper Covered Dampers

Another new development mentioned by the speaker involves the use of a high wet strength paper wrapped around the damper rollers. This paper can be wrapped over the textile covering on the present dampers, or a special, sponge rubber type of damper roller can be used, and the paper wrapped directly over the sponge rubber. When the paper becomes dirty, it is pulled off, throw it away, and wrap a new piece of paper around the damper cylinder. The prospect of no more dirty damper rollers to clean should be a heartening one to many a pressman, Dr. Hartsuch added. This paper is not on the market yet but will be in the near future.

He noted that coated paper has improved and said that one company is now producing a machine coated paper for use in offset printing. He also mentioned a extra high gloss paper called Lusterkote, announced by S. D. Warren Co.

The era of the doctoring of inks by pressmen with everything they can get their hands on, is gradually coming to an end, he said. There is a greater tendency to run inks from the can. Ink manufacturers are improving their control of the tack, grinding and general litho properties of the inks. There has been an improvement in pigments for litho inks to give a finished ink with less tendency to emulsify, less tendency to grease, and increased color strength.

Recently, he reported, a special varnish has been developed as a litho ink reducer. This varnish reduces the tack of the ink, if this is necessary to fit the ink to the paper, but the resulting ink is still long. This special varnish also will not increase the greasiness of the ink, and the dried ink can be overprinted with no trouble.

### Control Points

Title of the concluding speaker's talk was *Seven Major Control Points* which was presented by A. P. Reynolds, Director, Printing-Testing Laboratory, S. D. Warren Co. He named these seven points as plate graining, camera, platemaking, the press, ink, paper and employee attitude.

Reynolds enumerated the necessity for grain control in offset plates. Paper performance, he said, is influenced by the way the grain carries fountain solution, as well as the chemistry and printability of inks. The life and usefulness of press dampers depend upon grain character. Also the life of the plate image and the sharpness of that image. The character of halftone screen copy is influenced, as well as the density, coverage and smoothness of solids. He said that every element of the offset process from copy to finished job, is adversely affected by poor grain, and particularly by variability of grain.

He listed the eight most important variables that affect graining as type of plate metal; composition, load and size distribution of marbles; type, size, amount and breakdown of abrasive; speed and stroke of graining machine; amount of water; time schedule of graining cycle; condition of plate before graining; and handling and treatment of plates after graining.

The speaker offered five points of advice that he said should cover at least 80 per cent of the remaining hazards. A clean, well organized graining room. Follow a definite fixed procedure. Adopt a proper maintenance schedule for graining equipment. Use the best of supplies. Employ competent help. These variables, he stated, result mainly through poor housekeeping and lax attitudes on the part of both management and employees.

In discussing the control of the camera, he said it took a long time to determine the precise tonal values to complement plate grains, press influence, paper surfaces and other such influences that must be taken into consideration in order to achieve brilliance and sparkle in halftone reproduction.

Platemaking, the basic element of the offset process and a very important point of control, according to Reynolds, calls for fixed procedures, uniform supplies and good equipment. He said that the only positive solution to the effects of weather variations is complete air conditioning.

### Combating Temperature and Humidity

For those Craftsmen who have to work in unconditioned plants, the speaker


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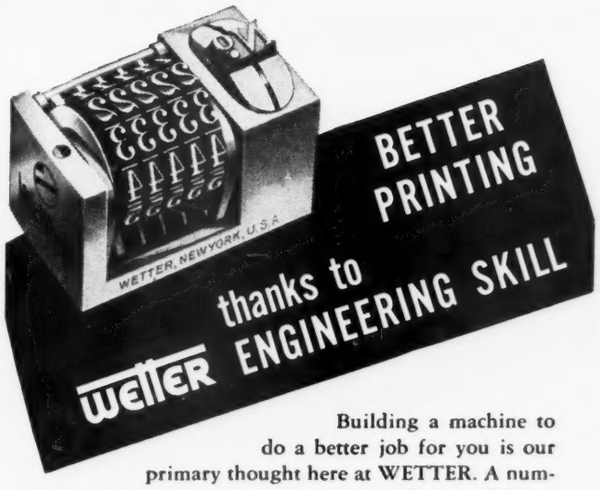


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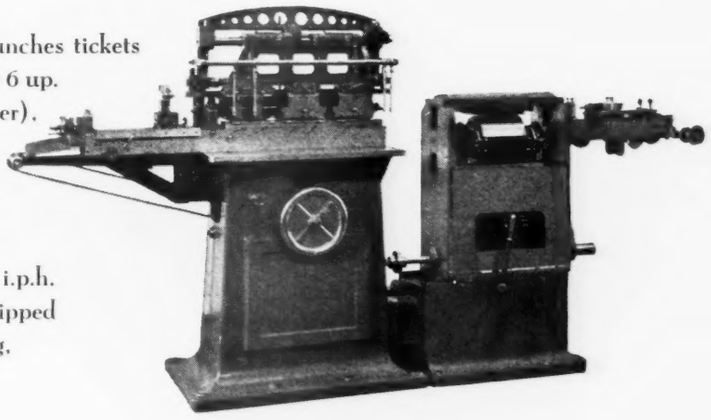

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12 gal. (or more) . . . . $4.75

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1 gal. . . . . $2.40
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for COPPER, ZINC and MAGNESIUM PLATES. Tooths a plate faster, cleaner, better! Eliminates usual pumice mess—is non sink-clogging. Packed in handy 3 lb. dispensing containers.

Lots of 12 cans or more . . . $1.50 per can
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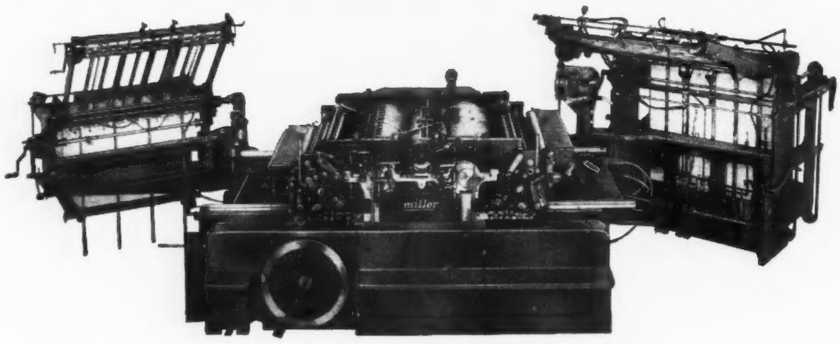


**The new Miller 27 x 41 TY Two-Color is an exceptional press — exceptional in its compactness, "step-saving" accessibility and handling, exceptional also in its low overall height and visibility. Positive control of sheets, rigid impression, unsurpassed ink distribution, unique delivery and automatic oiling help still further to make this two-color the "pressman's press", just as efficient, effortless performance make it the estimator's favorite.**

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offered several suggestions in combating temperature and humidity. Proper handling will prevent excessive changes in the weather from getting at the sensitive parts of the process. Recording instruments in the platemaking area will show the rate and degree of change, and make more accurate predictions possible. The LTF Sensitivity Guide tells the platemaker whether or not he is on the mark regardless of the influence of several simultaneous variables.

A number of points of possible variability can be found in the control of the press. The press inherits variables in the form of the plate. Dampers and dampening solutions are a source of constant variation, as well as the inking system. Blankets vary in uniformity of thickness, surface hardness and porosity. Good mechanical adjustment throughout every part of a press is also an essential.

In approaching the problem of ink control in an offset pressroom, the speaker said the first step is to decide just how much ink formulation the pressmen are capable of doing. He advocated leaving most of this to the trained technicians of the ink industry. He suggested the following four steps for ink control: For black and white reproduction use soft, medium and heavy bodied inks; use press tested colors; limit additions of varnish, driers, waxes, etc.; keep a formula file of ink mixtures and a sample of the paper and job.

### Handling Paper

In the control of paper, Mr. Reynolds stated that we must admit that paper varies and will change every time the weather changes. Paper swells and shrinks as it gains and loses moisture. Paper has grain direction and swells more across the grain than with it. Paper has a felt and wire side and tends to swell faster on the wire side and to curl because of this.

Paper in piles gains or loses moisture faster around the edges than in the middle, causing wavy sheets if expanded and cupped sheets if contracted. Paper, colder than the room gathers moisture; paper, warmer than the room gives off moisture, resulting again in wavy or baggy sheets as the case may be.

To control these inherent paper variables, he suggested bringing the paper to pressroom temperature before breaking the waterproof wrappers. Keep paper sealed from pressroom air when not actually on the press. Know your pressroom temperature and humidity, and the paper temperature and humidity, so you can accurately predict your chances of success under any given set of conditions. Keep paper stored under the most favorable conditions of moisture and temperature. Keep measuring instruments in perfect calibration and use them often.

Reynolds concluded that control is more or less attitude toward attention to detail displayed by those engaged in lithographic operations. One can work clean and orderly with less effort than is required to muddle around in confusion, he said.

In the brief discussion period which followed the speaking program, one of Craftsmen present asked if there has been

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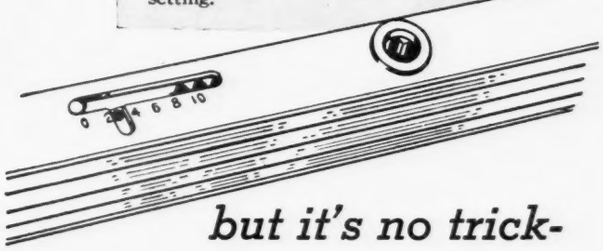

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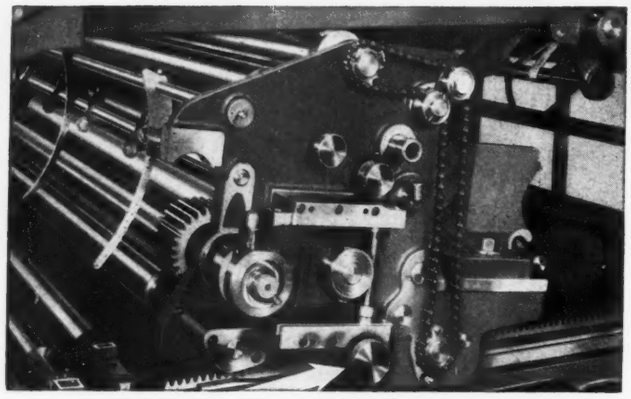
# new inker



The inker on the new Miller 27 x 41 TY Two-Color Automatic Cylinder Press has been completely redesigned. New metallurgy and new design have been joined to assure the utmost in inking capacity for every form.

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any means devised for accurately measuring the grain on an offset plate. Mr. Reynolds, replying in the negative, explained that this still must be done by eye. He added, however, that photographic copies of grain structure in offset plates are available from the Lithographic Technical Foundation and are used for comparison with the plate in question.

One of the Canadian Craftsmen present noted that much had been said by the speakers about running ink now directly from the can. He wanted to know if anything has been done to enable the pressman to run paper direct from the skid. Mr. Mahoney, Chairman of the clinic, suggested keeping the paper sealed on the skids before the run is actually started.

In reply to a query about color standards, Mr. Morgan said that at the Litho-Krome plant they use a set of four color standards for obtaining pre-determined results in color separations. These same colors are also used on the presses, he added, with a densitometer used to measure the film of ink.


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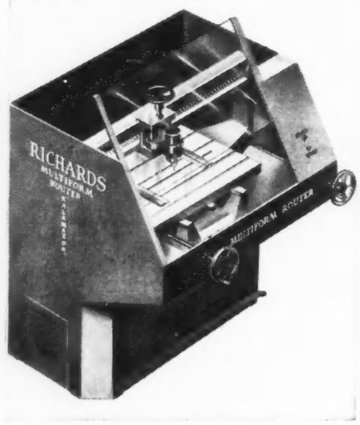


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## *Safety Clinic*

A CLINIC on Plant Safety was conducted by Chairman Phil McAteer, Vice President, New England Electrotype Co., Boston. The first speaker, Peter J. Bernard, Director of Personnel and Safety, H. Wolff Book Mfg. Co., Inc., New York, discussed *Earning Dividends Through Safety*. In his opening remarks, Bernard said it is regrettable that in most industries, human engineering has not kept pace with technological engineering. This failure, he continued, has contributed immensely to the shameful record of loss of life and limb in industrial accidents throughout the nation.

The speaker said it was gratifying to know that the need for the development of more safety programs is gradually being recognized by the printing trades.

He noted that there is a great deal of room for improvement in safety programs in the printing industry despite reports which say that we had a good safety record last year and that all is well.

Bernard outlined briefly what management can do to improve its accident prevention activity. To explain this, he told the Craftsmen of the accident experience at the Wolff company. In a normal accident occurrence tabulation, machinery accidents should outrank all other causes, but such was not the case in the Wolff plant. Over exertion, which included mostly hernias, was outstanding.

The figures proved later, according to the Safety Director, that not all of these hernias could have occurred on the job. Pre-employment physical examinations became a company policy. He related that only two hernia cases have appeared in the last five years.

Continuing, he said that back injuries due to improper lifting, pushing and pulling have been greatly reduced through safety education and the use of electric lift trucks wherever possible to transport heavy loads. Accidents due to poor housekeeping and maintenance, which stood second on the list in the Wolff plant, were corrected by setting up a centralized housekeeping organization to keep the plant clean and orderly.

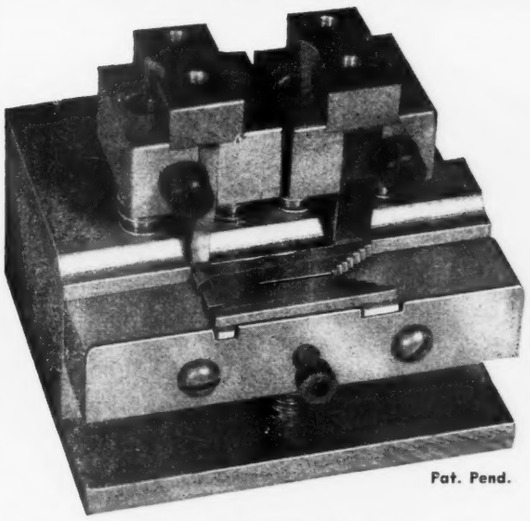
Unsafe machine operation is still a problem, he said, and will continue to be until employees are disciplined for violating the safety rule forbidding them to adjust, oil or repair machines with the power on or while they are in motion.

In conclusion, Bernard stated: "It was through the almost unbelievable reduction in our accident severity and frequency that we were able to buy retrospective or cost plus insurance beginning January 1, 1948."

*Effect of Frequency and Severity On Compensation Insurance Rates* was the title of the next talk delivered by C. A. McGinnis, Engineering Supervisor, Employers Mutual Liability Insurance Co. of Wisconsin. He noted that industry in general has come to realize that an accident prevention program pays big dividends in increased production, better labor management relations, and a saving in compensation insurance costs. Nevertheless, he added, there are still a considerable number of industrialists who have not yet awakened to these facts.

McGinnis defined frequency as meaning the number of accidents which occurred during any given interval of time. The term severity as used by the speaker was taken to mean the seriousness, from an injury standpoint, of the accident. The base rate of compensation insurance, usually called a manual rate, varies with

## The Align-A-Mat



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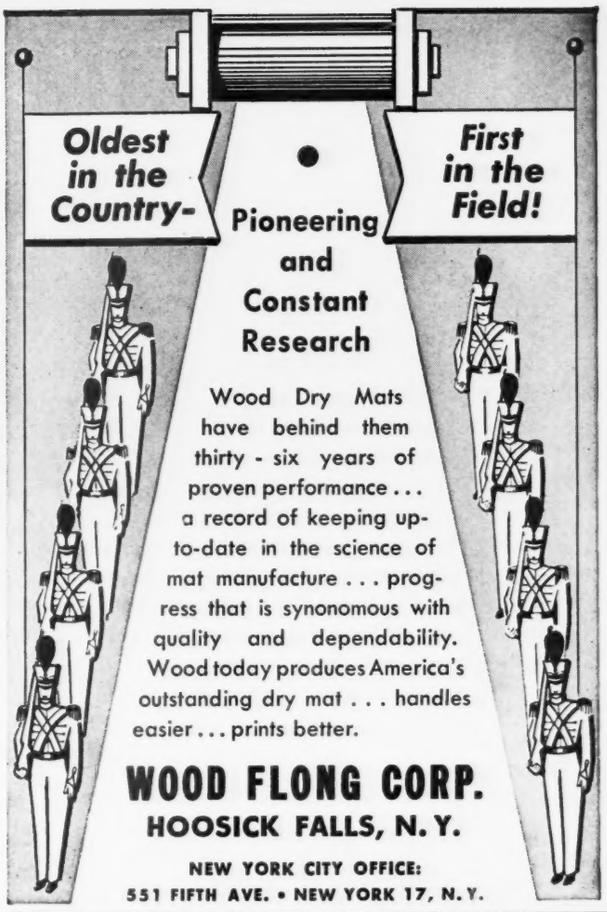
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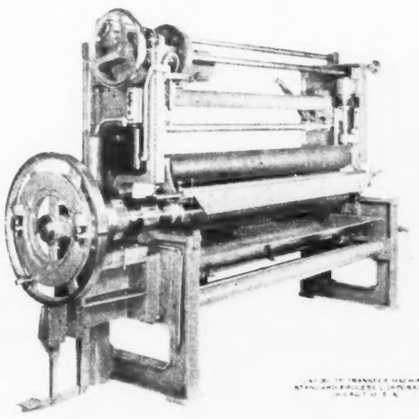

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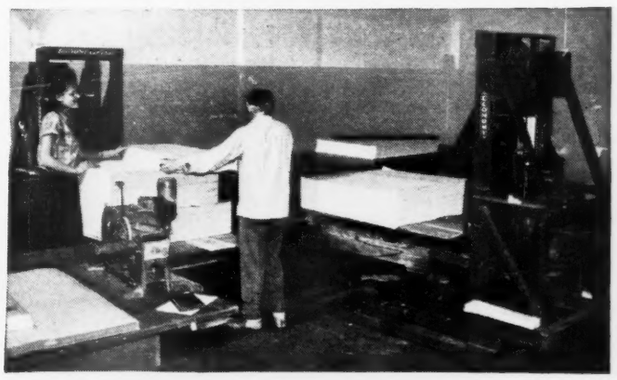

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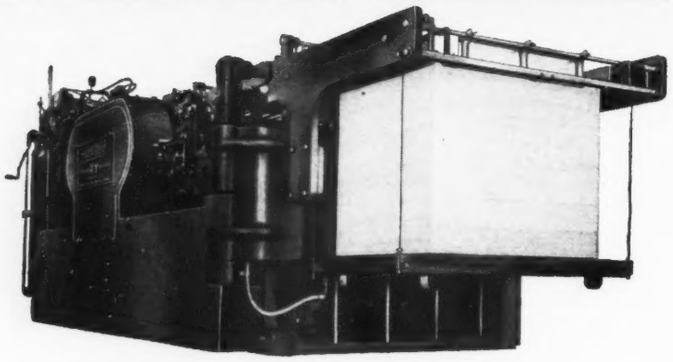

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different types of industry. The manual rate is arrived at by taking the payrolls of a given industrial group and comparing these payrolls with the losses of that group. This is the cost of the insurance to the average firm in any given industry.

The speaker explained that in order to prevent the firm with low losses from paying a penalty under such a rate making process, and helping to absorb the losses of that portion of the industry which were exceedingly excessive, the Experience Rating Plan was devised. Experience rating is a method or a plan under which compensation rates for an individual employer are increased or decreased depending upon his past experience.

He said that the purpose of the experience rating plan is to modify the rate in advance to cover the amount of the expected losses to the policyholder. It also serves to encourage employers to undertake effective safety measures for the purpose of reducing accident and occupational disease frequency and severity.

According to McGinnis, this experience rating plan incorporates what is known as a Multi-Split plan in which greater emphasis is placed on accident frequency and correspondingly less emphasis on excessive losses in individual cases. Under this plan, both the medical and the indemnity for compensation payments are combined for rating purposes. The total loss on each claim costing $500 or less enters the rating at its actual value. The maximum value of any loss is $1,500 under the plan.

He added that the determination of the adjusted rate takes into consideration the payrolls and losses for a previous three year period. If over a three year period a firm's experience were bad, they must live with it for three years. In concluding, he stated that accident frequency and accident severity has a direct relation toward insurance costs. Anything that can be done to make accident programs function more efficiently will produce a dollar saving.

## *Graphic Arts ? Box*

THE Graphic Arts Question Box session on Wednesday afternoon drew a good attendance. Chairman Phil McAteer was chairman of the meeting and kept the "ball rolling" throughout the meeting. While answers to some of the questions may be known to many Craftsmen, yet the fact that they were submitted to the panel indicates the need for information and that those who answered them were willing to take time out to do so. He stated that all of the questions to be asked were submitted from Craftsmen's Clubs throughout the country. A panel of 16 Craftsmen from various parts of the United States answered questions as designated by Chairman McAteer.

The first question was assigned to Albin R. Johnson, jr., sales representative, Tileston & Hollingsworth Co., Boston papermakers. The question was: Should paper for a job be bought without consulting plant executives? Johnson's answer was that in larger plants a specialist is hired for this purpose and usually he consults with plant executives concerned with the production of a job. In the smaller plant, cooperation should exist among the office, plant man or men concerned and the supply man.

The next problem was assigned to MacD. Sinclair, Editor, *Printing Equipment Engineer*. A local club officer wanted to know what could be done in furnishing programs of interest to a bindery man who resigned from the club because programs were not related directly to bindery operation. The answer was that it is surprising a bindery executive is not interested in the other methods and processes employed in the printing plant, especially so since all of the processes have been employed to produce the printed job before he receives it in his department. All Craftsmen should be interested in all processes and techniques used in the Graphic Arts industry. In some clubs, one night a year is devoted to a particular plant operation. Since it is impossible to favor any one operation, it is advisable for the Craftsman to read trade publications, particularly those related to his branch of the industry. Mentioned also in the answer were the Research and Operations Manuals published by the Research and Engineering Council of the Graphic Arts, Inc., a number of which are devoted to bookbinding.

Chairman McAteer asked John A. McLean, PIA Consultant, to answer the question: Has the plastic molding process improved electrotyping? Mr. McLean said it was one of the most important developments in electrotyping in many years. Its greatest value is its accuracy of production. He mentioned that a slight scratch in the pattern plate and which is not supposed to print, will be reproduced in the plastic mold with great fidelity.

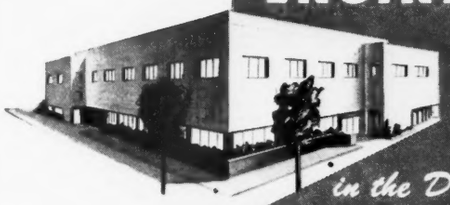
Paul A. Bennett of Mergenthaler Linotype Co., answered a request for the names of the six most popular book type faces as follows: Baskerville, Janson, Caledonia, Granjon, one of the Caslons and Electra.

George Welp, Advertising Mgr., Interchemical Corp., New York,

No one seemed to have the answer to the question concerned with what progress has been made during the past year in the use of cold typesetting. Shepley Cleaves, Ludlow Typograph Co., however, did say that in the future in connection with the use of phototypesetting the dummy will have to be a finished one —not an estimate. It will have to be exact. To meet this problem, he said the printing industry should start educating its men now.

Walter Scarborough of Cuneo Eastern Press, Philadelphia, was handed the question by Chairman McAteer as to whether or not the cost of proofreading should be included in the cost of the job. Scarborough said: "By all means, especially if there are author's alterations."

# ARCHITECTS and ENGINEERS



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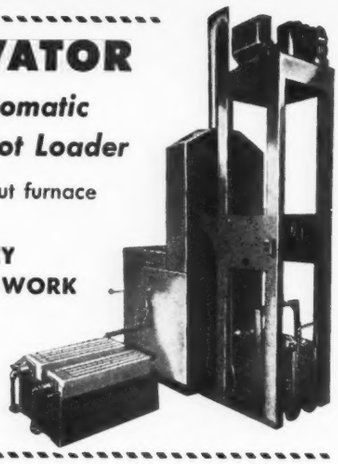

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PRINTING EQUIPMENT *Engineer*
1276 W. 3rd St., Cleveland 13, O.

He analyzed typical operations in the plant. He declared that proofreading is a part of the presswork. He cited one case in a run of 7 million copies where a blank for a name had to be in a certain alignment. The press sheets were not sent to the proofreader in this instance and a considerable part of the job had to be done over.

Gordon Buffett of Gordon Buffett Co., Boston, was handed the question: When should silk screen process be used for printing book covers? Buffett said the silk screen method was particularly adaptable for dark surfaces. Plastic book covers are also adaptable for the silk screen process. Most of the work in the average plant runs to 85 line screen. Some plants are using 120 line screen and some are doing four-color work. Referring to the smallest size type which it is practicable to use in silk screen printing, he said that actually there are no limitations because of the photo films, inks and equipment now in use.

### Keeping Off the Rust

Someone asked how to keep rust off the exposed surfaces of machinery in a room the temperature of which varies from cool to working temperature or perhaps in areas adjacent to salt water. One Craftsman in the audience suggested rubbing the surfaces with machine or linseed oil during the week end. Another suggested the use of a plastic spray.

Perry R. Long, General Mgr., Bryan-Brandenberg Co., Los Angeles, was asked to comment upon what can be done to attract young men to the industry. For one thing, he thinks the printer should be more proud of his profession. He should exert some effort to interest young men. In particular effort should be made to interest students in public schools. The printing profession should be glamorized to attract attention of the boys.

Earl Bierbauer, Superintendent of the Baring Press, Detroit, remarked that boys in the plant should be supervised to keep their interest up, they should be patted on the back when a pat is deserved, and should be encouraged by giving them a chance in the plant. They should be taken on trips to paper mills, ink plants and the like.

The consensus of opinion after some discussion was that some time should be spent on boys in the trade and to attract them into the trade.

Frank Bartojay, W. F. Hall Printing Co., Chicago, discussed what precautions should be taken by the buyer of photoengravings. Bartojay said the photoengraver should be supplied all possible information, what the engravings were to be used for, whether or not they were to be printed on platen, cylinder or rotary presses, and the engraver should be supplied with ink and paper to be used in the job. In any event, the entire job should be reviewed with the photoengraver.

Howard King, Vice President, The Maple Press, York, Pa., was asked several questions in one group. The first of these was what type faces were most suitable for technical book composition. He said that in his plant those concerned had long tried to get away from Monotype 8A. Eventually, after trying other faces, the return was made to Monotype 8A. He agrees there is no beauty in this face but it seems expressly adaptable to technical book composition.

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type faces, King said that Garamond and Bodoni were standouts. He recommended that the printer stay away from frills, frills ruin good typography. Design of the printed piece is more important than the type face.

Haywood Hunt, Typographer, San Francisco, discussed the factors which some people seem to think cause the composing room to be a losing proposition. On the whole, however, he thinks the composing room is an asset rather than a necessary evil.

Paul Bennett, Mergenthaler Linotype Co., when asked to discuss most popular faces used for advertising printing composition said the development of advertising type faces had come a long way since the introduction of Bookman, and other faces. A check on national magazines showed the following faces to be most popular: Bodoni Book, Ionic or Ideal, Garamond and Garamond Bold, Bodoni and Bodoni Bold. Sans Serif types rated for display purposes. He said: "Believe it or not, the largest lines are hand lettered type."

### Painting and Lighting

In response to a question read by Chairman McAteer, several Craftsmen spoke from the floor. The question asked information about painting schemes for mechanical departments of plants. One speaker referred to a brochure published by Pittsburgh Plate Glass Co. and another by E. I. du Pont de Nemours & Co. of Wilmington, Del. Briefly, the plans call for light green for walls, light gray for machinery, with color schemes in red, buff or yellow for dangerous or operating parts of machines.

Paul Bennett, in speaking briefly on lighting efficiency, stated that printers can get a lot of good information from General Electric's Nela Park and other manufacturers.

Earl Ellis, Sales Mgr., Western Envelope Co., Milwaukee, Wis., said his firm consulted George Gaw, noted color specialist, and had him come into his plant. The machinery was painted gray, moving machine parts were painted green. Walls in the plant are white.

Earl Bierbauer, Baring Press, Detroit, thinks lighting fixtures should be so located in the pressroom so as to eliminate all shadows.

One Craftsman stated his firm called in a representative of Sylvania Electric Products, Inc. Lighting fixtures were hung in such a way that if the position is changed the lighting fixtures will not have to be changed. His plant's bays are 40 ft. by 40 ft. with 6 fluorescent lights to the bay emitting 50 foot candles. He also said that these lighting companies are always glad to send a man into the plant to make suggestions and furnish free estimates.

William Plummer of Ottawa, Can., discussed a question about the most practical way to file rubber printing plates. He said that in his plant the plates are thoroughly cleaned, they are powdered before placing them in the file box. The boxes are of varied sizes and go into the filing cabinet on ending (vertical position). The file cards containing all information are 8½ in. by 11 in. Plates used in his plant are all rubber without backing.

### Eliminating Friction

Perry Long was asked to comment on the best approach to elimination of friction between the day and night forces in a two-shift plant operation. He said it seemed to him that the solution is found in the establishment of standards for both shifts to follow. For instance, in the pressroom, establish a standardized press packing which no pressman would be permitted to deviate from. Standardized operation removes points of friction. A great deal of attention should be paid to human relations. He praised the work of John T. Pluhar, General Mgr., Maurice Leeser Co., and President of the Baltimore Craftsmen's Club, for his work in the Foreman's Training Program, and said this instruction would be valuable in eliminating friction.

Chairman McAteer read the next question about reproduction proof paper and asked Albin R. Johnson, jr., to discuss it. Mr. Johnson said the average combination shop operates one proof press and its proofs are touched up by an artist to make them suitable for camera reproduction. He mentioned Relyon proof paper, manufactured by McLaurin-Jones Co., Brookfield, Mass. He stated this paper is made so that the blacks on a solid plate will fill in readily.

William Gleason, Colonial Press, Inc., New York, mentioned Kromekote which is used in many shops for pulling reproduction proofs. Kromkote proofs, he said, should be pulled on a cylinder press. John A. McLean mentioned the Reproduction Proofing Manual published under the auspices of the Research and Engineering Council. He also commented upon the proofing developmental work conducted in the U. S. Government Printing Office. He supplemented the remarks of one of the Canadian Craftsmen speakers by stating that on two-side transparencies proofs were taken with magenta color ink.

While Mr. McLean was on his feet, someone in the audience asked him to answer a question, as follows: On a one-color and black stereotype mat, where the register is not too close and consists of type and line work, what is the best way to cast the plates? McLean said it is preferable to roll one good mat and make two casts from it under identical conditions, then rout the plates for color.

Paul A. Bennett reported that his company orders reproduction proofs from time to time. It is his company's policy to give the platemaker reproduction proofs on the kind of stock requested—Kromkote, English Finish, or what have you stock.

The last question was referred to Tom Mahoney, Plant Mgr. for Regensteiner Corporation, Chicago. It was related to biand tri-metal offset printing plates. He said that six firms in Chicago either are using one or the other or are installing equipment to make them.

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## Brown's New Plant

W. A. Brown Mfg. Co. has opened a new plant in Woodstock, Ill., which will contain the production lines for many of the firm's standard lines of equipment such as layout tables, retouching stands and vacuum printing frames. The new plant provides about 10,000 sq. ft. of floor area and will house bench assembly space, tool room, stock storage and factory office alongside. Main office of the company will continue at 2035 Charleston St., Chicago.

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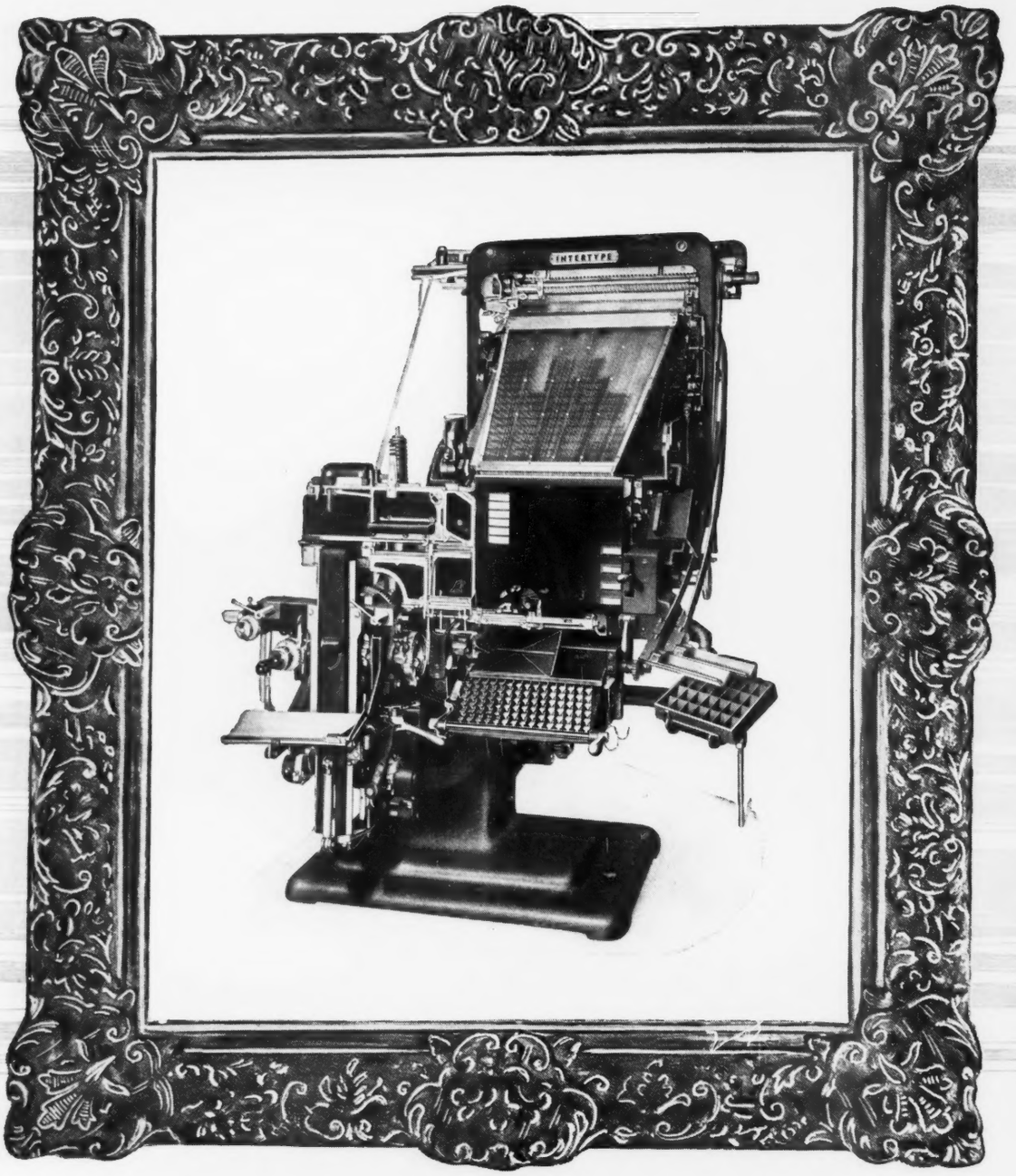


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